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Local Earthquakes Recorded by Polish Seismic Stations 2005

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1. General information

The majority of seismic events recorded in Poland are caused by mining activity in the Upper Silesian Coal Basin and Lubin Copper Basin. Induced seismicity is observed less frequently in the Rybnik Coal District and Bełchatów Open-Pit Mining area.

The series of local earthquakes that began on November 30, 2004, of local magnitude M = 4.4, macroseismic intensity Io = 7 in the southern margin of the intramontane Orawa-Nowy Targ Basin, Western Carpathians, have been still recorded in 2005, mainly in January and February (Gutech 2006, 2007). The strongest aftershocks did not exceed macroseismic intensity 5 in the EMS scale.

Eight seismic stations were in operation in 2005 at the Institute of Geophysics, Polish Academy of Sciences: Górka Klasztorna (GKP), Kalwaria Pacławska (KWP), Książ (KSP), Niedzica (NIE), Ojców (OJC), Racibórz (RAC), Suwałki (SUW) and Warszawa (WAR). Station parameters are given in Table 1. The location of seismic stations operated by the Institute of Geophysics and by research centers associated with coal mining (Katowice, Bełchatów) and copper mining (Lubin) is presented in Fig. 1.

The bulletin contains a list of local earthquakes which occurred in 2005 in Poland. The full description of each earthquake contains: epicentral location (φ, λ), time of origin (H), local magnitude (M). The location of events listed in this bulletin is given in Fig. 2. For comparison, location of the same events done by NEIC is presented in Fig. 3.

Magnitudes of all earthquakes are based on spectral method. This method allows conversion of the recorded ground particle velocities into ground particle displacements. The modified FFT method has been applied, for which a multitaper method (Thomson 1982, Park *et al*. 1987) has been used instead of a single taper window. The multitaper

Table 1

Seismic stations – site information and equipment

Station	Location	Date of opening	Current equipment		Foundation
			Seismometers	DAS	
GKP – Górka Klasztorna	53.2697 N 17.2367 E 115 m	Jun 2004	STS-2 (VBB)	MK-6	Post-glacial sediments
KSP – Książ	50.8428 N 16.2931 E 353 m	Jan 1971	STS-2 (VBB) BB-13 (BB) GS-13 (SP) SM-3 (SP)	MK-6 MK-2 MK-2 analogue	Consolidated sandstone, Lower Carboniferous
KWP – Kalwaria Pacławska	49.6314 N 22.7075 E 448 m	Jun 1999	STS-2 (VBB)	Quanterra	Carpathian Flysh
NIE – Niedzica	49.4189 N 20.3131 E 649 m	May 1960	SM-3 (SP)	MK-5	Limestone
OJC – Ojców	50.2196 N 19.7984 E 391 m	Sep 1991	STS-2 (VBB) GS-13 (SP) SM-3 (SP)	MK-6 MK-2 analogue	Limestone
RAC – Racibórz	50.0833 N 18.1942 E 209 m	Jan 1948*	KIRNOS (LP) SM-3 (SP)	MK-5 MK-5	Alluvial sands and clay
SUW – Suwałki	54.0125 N 23.1808 E 152 m	Nov 1995	STS-2 (VBB)	Quanterra	Post-glacial sediments
WAR – Warszawa	52.2417 N 21.0236 E 110 m	Jan 1939	STS-2 (VBB)	MK-6	Alluvial sands and clay

Seismometers: SP – short-period, LP – long-period, BB – broadband, VBB – very broadband
Data aquisition system (DAS): Quanterra Q380 – in cooperation with GEOFON network; MK-2, MK-5, and MK-6 described by Wiszniowski (2002)

* Date of reactivation after the World War II

method allows for a better and more reliable evaluation of spectrum. The scaling of the calculated spectra has been done using Parseval's theorem for every applied window separately (Niewiadomski 1997). The low frequency spectral level has been used to calculate seismic moment and magnitude (Brune 1970). In order to accelerate magnitude calculation a simple neural network is applied. The network takes filtered and averaged amplitudes of P-wave velocity records as the input data. The training was done on the basis of known examples of several hundred seismograms, where network's weight corrections were calculated by spectral method (Niewiadomski 2000). The performance of the applied neural networks for magnitude calculation is

the same as that of multitaper method. The seismic source radiation pattern is not homogeneous, and it is why the magnitudes calculated by different seismic stations are not the same. Average values of magnitudes are presented in the bulletin.

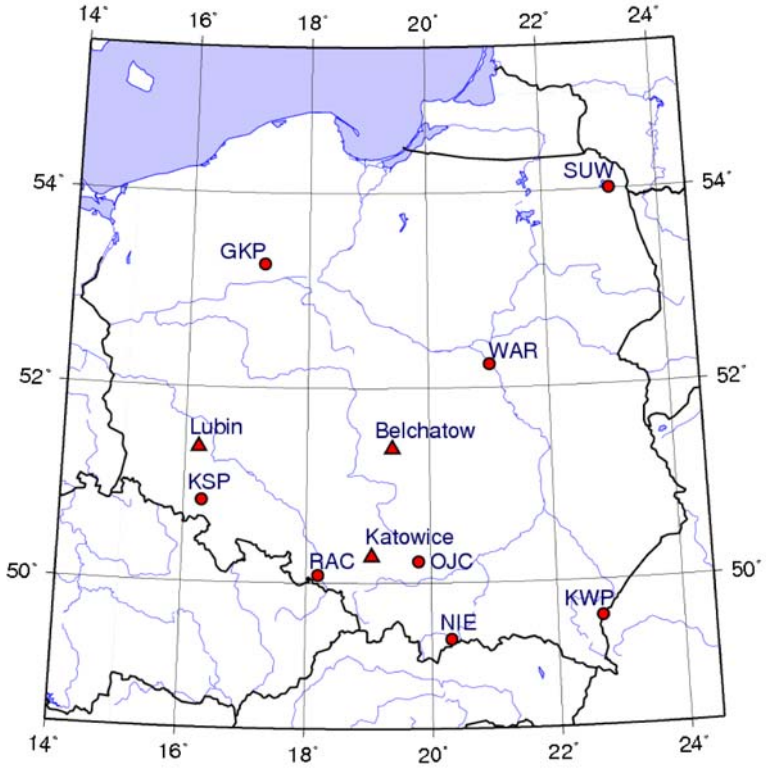

Fig. 1. Seismic stations operated by the Institute of Geophysics, Polish Academy of Sciences (●), and local seismic networks operated by mines (▲).

2. Interpretation of P and S waves

In the light of results provided by seismic refraction and wide angle reflection experiment CELEBRATION 2000 (Guterch *et al*. 2003), interpretation of seismic waves recorded in Poland at regional distances, between about 180 km and 600 km, were revised by Guterch (2007). Generally, at regional distances of more than about 180 km, direct Pg wave does not occur in first arrivals and follows the Pn wave. First arrivals of Pn waves are weak and have been recorded in Poland only for earthquakes with magnitude $M > 2.7$. According to record sections along profile CEL05 (Grad *et al*. 2006), the longest seismic profile in Central Europe, extending from the East European Craton across the Trans European Suture Zone, Carpathians, to the Panonian Basin, Pn is usually followed by much stronger reflected wave from the Moho PmP, or twice reflected wave from the Moho PmPPmP. These waves are

interpreted as Pg in routine seismic bulletins according to the Jefreys–Bullen or Herrin travel times, available for distances up to about 800 km. Pg waves at these distances, according to record sections of profile CEL05, are too weak to be recorded and are overlaid by much dynamically stronger PmP and PmPPmP waves. At distances of more than about 450-460 km, the P wave, i.e., the lithospheric wave, should be recorded in first arrivals. The same concerns, in general, the S waves. The Sn wave is followed according to CEL05 data by much stronger wave SmS reflected from the Moho, interpreted in routine seismic bulletins according to Jefreys–Bullen and Herrin travel times as Sg. Wave Sg is too weak to be recorded according to CEL05 travel sections. At distances of more than about 450-460 km, the S wave, i.e., the lithospheric wave, should be recorded in first S arrivals.

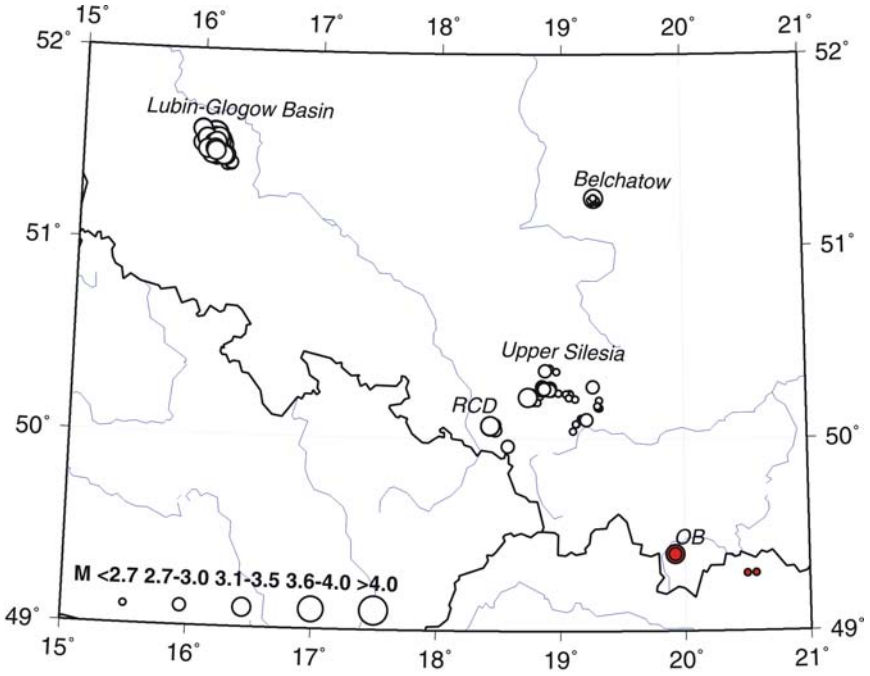

Fig. 2. Epicentres of earthquakes recorded in 2005 by Polish seismic network. ○ – mining induced seismic events: the Upper Silesia Coal Basin (US), Rybnik Coal District (RCD), Lubin-Głogów Copper Basin (LGB), and Bełchatów Open-Pit Mining area. ● – local tectonic earthquakes.

It seems that at regional distances of more than about 180 km the onsets interpreted as Pg and Sg phases are probably arrivals of waves PmP, or PmPPmP and SmS, i.e., reflected from the Moho.

The interpretation of phases given in the bulletin is made according to Jeffreys–Bullen and Herrin travel times. Only for earthquakes in the Orawa Basin, Western Carpathians, the suggested interpretation of waves PmP/PmPPmP and SmS instead of Pg and Sg is done.

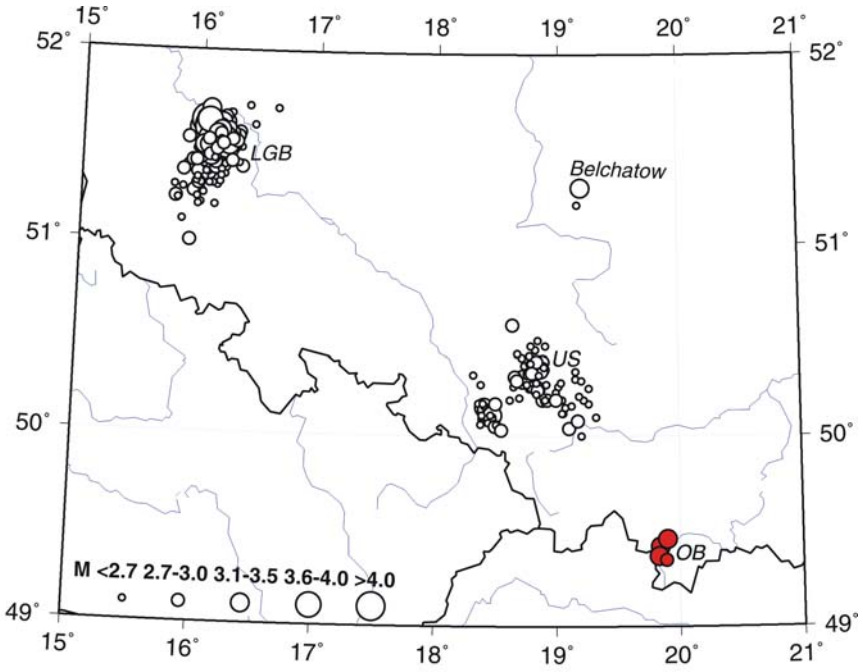

Fig. 3. Epicentres of earthquakes recorded in 2005 by NEIC. ○ – mining induced seismic events: the Upper Silesia Coal Basin (US), Lubin-Głogów Copper Basin (LGB), and Bełchatów Open-Pit Mining area. ● – tectonic earthquakes recorded in the Orawa-Nowy Targ Basin (OB), Western Carpathians.

3. Induced seismicity

Out of several thousand of seimic events induced by mining in Poland each year, only those with magnitude M > 2.6 for the Lubin-Głogów Copper Basin and with M > 2.0 for the Upper Silesia Coal Basin and Rybnik Coal District are listed in this bulletin. Occasionally, quakes of lower magnitude for the Lubin-Głogów Copper Basin have been given if the event was recorded by the NEIC Monthly Listing.

3.1 Upper Silesia and Rybnik Coal District

Epicentral location of Upper Silesian and Rybnik Coal District earthquakes was made by the Central Mining Institute in Katowice. Only if such data were missing, the coordinates were estimated at the Institute of Geophysics. The epicenters determined at the Central Mining Institute are labelled (GIG). The other two source parameters, the time of origin and magnitude, are determined at the Institute of Geophysics. The origin times are based on the Pg and Sg arrivals recorded at stations OJC, NIE, KSP, and RAC. Seismic events with magnitude M > 2.4 recorded in the Upper Silesia and Rybnik Coal District in 2005 are presented in Fig. 4.

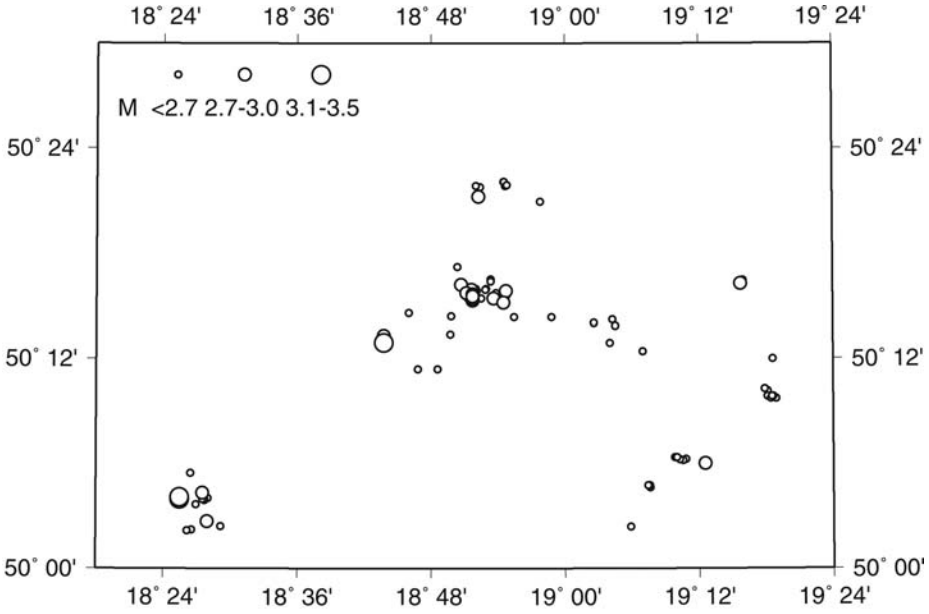

Fig. 4. Mining induced earthquakes recorded in the Upper Silesia and Rybnik Coal District in 2005. Epicentral location of earthquakes made by mining networks of the Central Mining Institute in Katowice.

3.2 Lubin-Głogów Copper Basin

Epicentral locations of tremors from the Lubin-Głogów Copper Basin were made by the Copper Mining-Metallurgical Company in Lubin on the basis of the local seismic networks at Lubin, Polkowice, Rudna and Sieroszowice mines. The average accuracy of epicenter location is about 50 m and occasionally even 20 m. Most of seismic events in the Lubin-Głogów Copper Basin occur at depths between 500 and 1000 m. The other two source parameters, the time of origin and magnitude, are determined at the Institute of Geophysics. The origin times are estimated from the arrival times of the Pg waves recorded by KSP assuming Pg velocity of 6.1 km/s. Seismic events with magnitude M > 2.7 recorded in the Lubin-Głogów Copper Basin in 2005 are presented in Fig. 5. All these events occurred within the area of the Lubin-Głogów copper mines. Dispersion of epicentres follows NW-SE direction, and the area of earthquake occurrences is about 25 km long (see also Fig. 2). NEIC epicentres of events in the Lubin-Głogów Copper Basin are widely dispersed NE-SW and could delineate an artificial seismic line, about 100 km long, in SW Poland (see Fig. 3).

A general interpretation of Lubin-Głogów earthquakes recorded by NIE and RAC is given i.e., phases P and S, and occasionally phases Pn and Sn for stronger events of M > 2.7.

3.3 Bełchatów Open-Pit Mining area

Epicentral location and time of origin of the Bełchatów earthquakes were made at the Bełchatów Open-Pit Coal Mine on the basis of the local seismic network.

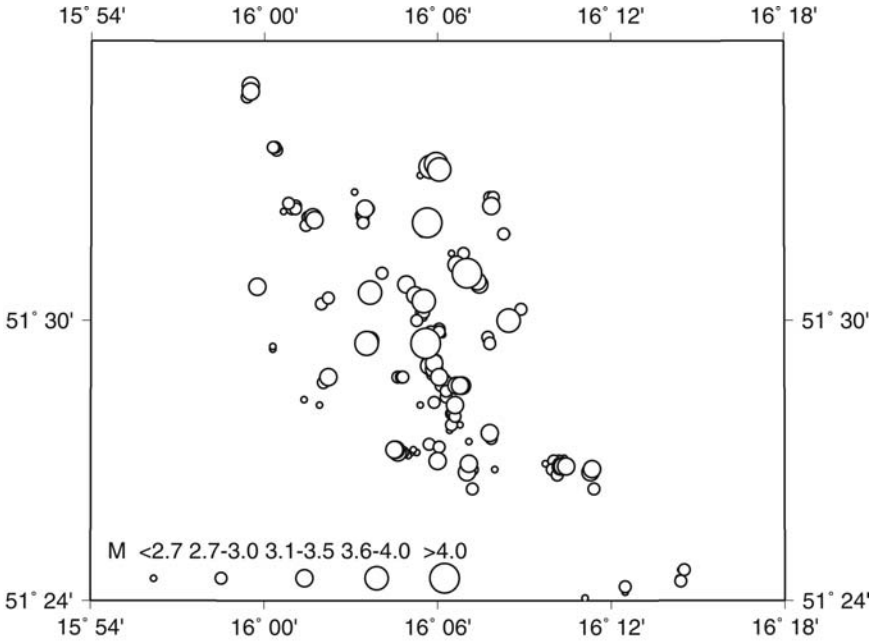

Fig. 5. Mining induced earthquakes recorded in the Lubin-Głogów Copper Basin in 2005. Epicentral location of earthquakes made by mining networks of the Cpper Mining-Metallurgical Company in Lubin.

4. Local tectonic earthquakes

The series of earthquakes that began on November 30, 2004, occurred in the southern margin of the Orawa-Nowy Targ Basin, in the area where the Pieniny Klippen Belt is expected to be crossed by the Ruženberok-Mszana-Dolna deep fault (Guterch 2006). Local seismic events of $M \leq 3.3$ were observed there on September 1995 (Guterch *et al*. 2005). The main earthquake of November 30, 2004 was followed by long series of aftershocks. The strongest aftershocks occurred in year 2004 on December 2 of $M = 3.6$, December 9 of $M = 3.4$, and in the year 2005 on January 23, January 29, and June 2 of $M = 3.1$, 3.4, 3.2, respectively.

Out of 270 events, 44% occurred within 24 hours after the strongest one. Every aftershock of magnitude $ML > 2.5$ was followed by increased seismic activity and was recorded by a sufficient number of stations to determine the epicenter data. Epicenters of seismic events were determined after records of the nearest stations in the Czech Republic, Poland and Slovakia, by Dębski *et al*. (1997) method, assuming the mean Moho depth $h = 35$ km. Seismic events of $M < 2.0$ were recorded only by station NIE. Only two events, on February 18, 2005 of $M = 2.7$ and $M = 2.5$, originated from another source, about 7 km west from the epicenter of the main earthquake of November 30, 2004.

The area where the strongest aftershocks occurred is the same as for the main earthquake, i.e., SE of Czarny Dunajec bounded by the villages: Bystre Stare Górne,

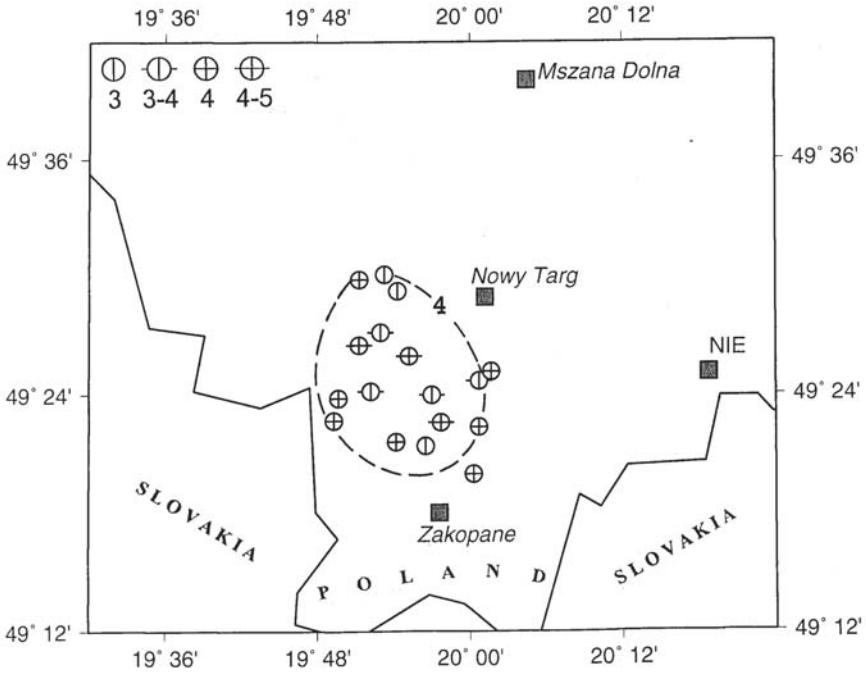

Fig. 6. Macroseismic map in the EMS-98 scale of the earthquake of M = 3.1, Io = 4-5 recorded in the Orawa-Nowy Targ Basin, Western Carpathians, on January 23, 2005.

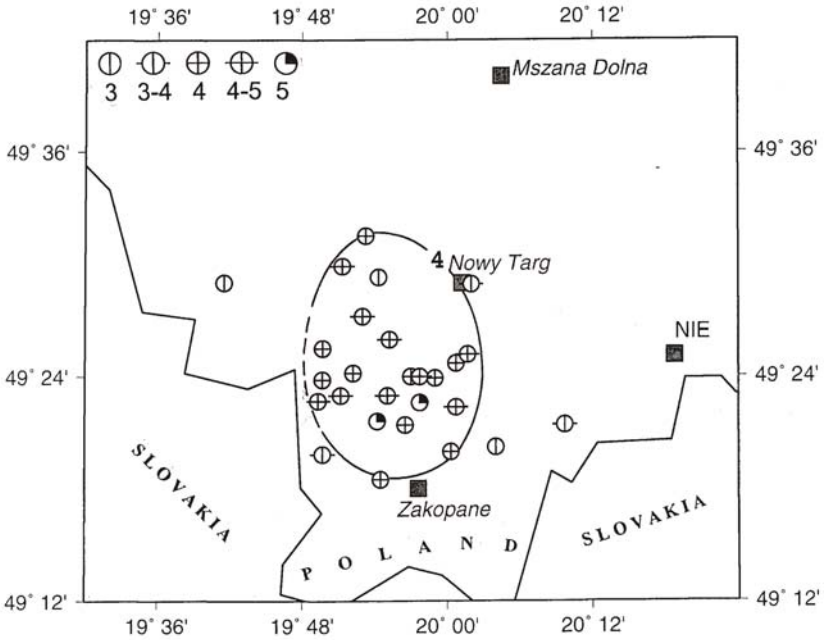

Fig. 7. Macroseismic map in the EMS scale of the earthquake of M = 3.4, Io = 5 recorded in the Orawa-Nowy Targ Basin, Western Carpathians, on January 29, 2005.

Czerwienne, Ratułów, Sierockie, Skrzypne Dolne, Skrzypne Górne, Ciche Dolne and Ciche Górne. Intensities did not exceed I = 5 EMS. On November 30, 2004, most houses in this area sustained damage of grade 1 and many of grade 2 in the EMS scale. Intensities were strongly attenuated with distance and aftershocks were not felt 20 km from the epicenter.

Macroseismic epicenters, the same for the main earthquake and aftershocks, are also given in the bulletin. The foci of earthquakes are shallow, less than 5 km, originated in the Podhale Flysch basement of the Orawa-Nowy Targ Basin. The macroseismic maps in the EMS-98 scale of the strongest aftershocks recorded in year 2005, on January 23 and January 29 are presented in Fig. 6 and Fig. 7, respectively.

The last local tectonic events in 2005 occurred SE of station Niedzica in the Pieniny Klipper Belt region. These events were not recorded by NEIC.

The bulletin was prepared by Danuta Cerlica for induced earthquakes in Upper Silesia Coal Basin and by Ewa Tomaszewska in the Lubin-Głogów Copper Basin.

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Upper Silesian Coal Basin 2005

JAN 3

GIG: φ = 50.162°N, λ = 19.315°E
H = 15:47:01.0, M = 2.5

OJC	Δ = 35km		
	Pg eZ	15	47 06.7
	Sg iN		47 11.3
NIE	Δ = 109km		
	Pg eZ	15	47 19.8
	Sg eE		47 34.4
KSP	Δ = 227km		
	Pg eNEZ	15	47 40.2
	Sn eNEZ		48 04.6

JAN 3

GIG: φ = 50.262°N, λ = 18.864°E
H = 16:21:01.1, M = 2.2

OJC	Δ = 67km		
	Pg eZ	16	21 13.7
	Sg iE		21 21.7
NIE	Δ = 140km		
	Pg eZ	16	21 25.8
	Sg eE		21 44.0
KSP	Δ = 193km		
	Pg eNEZ	16	21 33.7
	Sg eNEZ		21 56.4

JAN 4

GIG: φ = 50.233°N, λ = 19.035°E
H = 10:14:49.4, M = 2.3

OJC	Δ = 55km		
	Pg eZ	10	14 59.4
	Sg eN		15 06.9
NIE	Δ = 129km		
	Pg eZ	10	15 12.0
	(Sg) eE		15 29.2
KSP	Δ = 205km		
	Pg eNEZ	10	15 23.6
	Sg eNEZ		15 49.4

JAN 4

φ = 50.20°N, λ = 19.31°E
H = 16:56:09.0, M = 2.5

OJC	Δ = 34km		
	Pg eZ	16	56 15.0
	Sg eN		56 19.7
NIE	Δ = 113km		
	Pg eZ	16	56 28.2
	Sg eE		56 43.4
KSP	Δ = 226km		
	Pg eNEZ	16	56 47.9
	Sn eNEZ		57 12.7

JAN 5

GIG: φ = 50.261°N, λ = 18.863°E
H = 05:03:15.8, M = 2.0

OJC	Δ = 67km		
	Pg eZ	05	03 28.5
	Sg eE		03 36.2
NIE	Δ = 140km		
	Pg eZ	05	03 40.0
	Sg eE		03 58.3
KSP	Δ = 193km		
	Pg eNEZ	05	03 48.4
	Sg eNEZ		04 11.9

JAN 5

GIG: φ = 50.067°N, λ = 18.462°E
H = 13:32:34.1, M = 2.5

RAC	Δ = 19km		
	Pg eZ	13	32 38.5
	Sg eNE		32 41.9
OJC	Δ = 97km		
	Pg eZ	13	32 50.6
	Sg eN		33 02.7
NIE	Δ = 151km		
	Pg eZ	13	33 00.3
	Sg eEN		33 19.4
KSP	Δ = 177km		
	Pn eNEZ	13	33 02.2
	Sg eNEZ		33 24.5

JAN 5

φ = 50.24°N, λ = 19.01°E
H = 18:35:15.3, M = 2.2

OJC	Δ = 56km		
	Pg eZ	18	35 25.4
	Sg eN		35 32.8
NIE	Δ = 132km		
	Pg eZ	18	35 38.0
	Sg eE		35 55.5

KSP Δ = 204km
Pg eNEZ 18 35 49.8
Sg eNEZ 36 14.2

JAN 5
GIG: φ = 50.164°N, λ = 19.311°E
H = 19:47:46.7, M = 2.5

OJC Δ = 35km
Pg eZ 19 47 53.1
Sg eN 47 57.8

NIE Δ = 110km
Pg eZ 19 48 05.7
(Sg) eE 48 20.8

KSP Δ = 226km
Pn eNEZ 19 48 24.7
Sn eNEZ 48 49.8
Sg eNEZ 48 52.7

JAN 5
GIG: φ = 50.263°N, λ = 18.897°E
H = 23:50:55.4, M = 2.2

OJC Δ = 64km
Pg eZ 23 51 07.1
Sg eE 51 15.4

NIE Δ = 138km
Pg eZ 23 51 19.4
Sg eN 51 37.4

KSP Δ = 196km
Pg eNEZ 23 51 28.5
Sn eNEZ 51 50.3

JAN 6
GIG: φ = 50.261°N, λ = 18.864°E
H = 20:24:25.6, M = 2.3

OJC Δ = 66km
Pg eZ 20 24 37.7
Sg eN 24 46.0

NIE Δ = 140km
Pg eZ 20 24 50.6
Sg eE 25 08.1

KSP Δ = 193km
Pg eNEZ 20 24 58.5
Sg eNEZ 25 21.4

JAN 7
GIG: φ = 50.262°N, λ = 18.861°E
H = 14:33:17.6, M = 2.5

OJC Δ = 67km
Pg eZ 14 33 29.9
Sg eE 33 38.4

NIE Δ = 140km
Pg eZ 14 33 42.2
Sg eN 34 00.2

KSP Δ = 193km
Pg eNEZ 14 33 50.4
Sg eNEZ 34 13.3

JAN 7
GIG: φ = 50.066°N, λ = 18.462°E
H = 15:00:37.4, M = 2.4

RAC Δ = 19km
Pg iZ 15 00 41.8 D
Sg iN 00 45.2

OJC Δ = 97km
Pg eZ 15 00 54.4
Sg eN 01 06.3

NIE Δ = 152km
Pg eZ 15 01 03.6
Sg eN 01 22.6

KSP Δ = 176km
Pg eZ 15 01 07.1
Sg eNEZ 01 27.7

JAN 7
GIG: φ = 50.223°N, λ = 19.013°E
H = 15:54:28.4, M = 2.3

OJC Δ = 56km
Pg eZ 15 54 38.6
Sg eN 54 46.1

NIE Δ = 130km
Pg eZ 15 54 51.7
Sg eE 55 07.5

KSP Δ = 204km
Pg eNEZ 15 55 02.6
Sg eNEZ 55 27.6

JAN 7
GIG: φ = 50.162°N, λ = 19.311°E
H = 22:38:55.6, M = 2.5

OJC Δ = 35km
Pg eZ 22 39 01.1
Sg eN 39 05.8

NIE Δ = 110km
Pg eZ 22 39 13.6
Sg eE 39 29.1

KSP Δ = 227km
Pn eEZ 22 39 32.1
Pg eNEZ 39 35.1
Sn eNEZ 39 55.1

JAN 7
GIG: φ = 50.066°N, λ = 18.466°E
H = 22:47:13.5, M = 2.4

RAC Δ = 20km
Pg eZ 22 47 17.9
Sg iN 47 21.4

OJC Δ = 97km
Pg eZ 22 47 30.3
Sg eE 47 42.4

NIE Δ = 152km
Pg eZ 22 47 39.9
Sg eE 47 58.7

KSP Δ = 176km
Pg eEZ 22 47 43.5
Sg eNEZ 48 03.8

JAN 8
φ = 50.09°N, λ = 18.44°E
H = 04:04:58.6, M = 2.2

RAC Δ = 17km
Pg iZ 04 05 02.4 D
Sg eNE 05 05.6

OJC Δ = 98km
Pg eZ 04 05 15.2
Sg eN 05 28.4

NIE Δ = 155km
Pg eZ 04 05 25.3
Sg eE 05 45.0

JAN 8
GIG: φ = 50.276°N, λ = 18.835°E
H = 21:46:09.4, M = 2.2

OJC Δ = 70km
Pg eZ 21 46 22.5
Sg eN 46 31.4

NIE Δ = 143km
Pg eZ 21 46 34.2
Sg eE 46 52.3

KSP Δ = 190km
Pg eNEZ 21 46 41.4
Sg eNEZ 47 04.1

JAN 9
φ = 50.19°N, λ = 19.29°E
H = 09:55:46.4, M = 2.3

OJC Δ = 36km
Pg eZ 09 55 53.0
Sg eN 55 57.7

NIE Δ = 112km
Pg eZ 09 56 05.5
Sg eE 56 20.4

KSP Δ = 225km
Pg eNEZ 09 56 25.6
Sg eNEZ 56 50.7

JAN 10
φ = 50.18°N, λ = 19.31°E
H = 16:07:17.3, M = 2.4

OJC Δ = 35km
Pg eZ 16 07 23.1
Sg eN 07 27.7

NIE Δ = 111km
Pg eZ 16 07 36.1
Sg eE 07 50.7

KSP Δ = 226km
Pn eEZ 16 07 54.2
Pg eNEZ 07 56.3
(Sn) eNEZ 08 19.9

JAN 10
GIG: φ = 50.232°N, λ = 19.034°E
H = 20:27:38.1, M = 2.4

OJC Δ = 55km
Pg eZ 20 27 48.1
Sg eN 27 55.6

NIE Δ = 129km
Pg eZ 20 28 00.4
Sg eN 28 17.3

KSP Δ = 205km
Pg eNEZ 20 28 12.8
(Sg) eNEZ 28 36.6

Upper Silesian Coal Basin 2005

JAN 11

GIG: φ = 50.162°N, λ = 19.316°E
H = 05:18:40.0, M = 2.5

OJC	Δ = 35km		
	Pg eZ	05 18	45.8
	Sg eN	18	50.4
NIE	Δ = 110km		
	Pg eZ	05 18	58.3
	Sg eN	19	13.7
KSP	Δ = 227km		
	Pg eNEZ	05 19	18.2
	Sn eN	19	43.3

JAN 11

GIG: φ = 50.041°N, λ = 18.469°E
H = 18:06:41.8, M = 2.2

RAC	Δ = 20km		
	Pg eZ	18 06	46.4
	Sg eNE	06	49.4
OJC	Δ = 97km		
	Pg eZ	18 06	58.9
	Sg eE	07	10.5
NIE	Δ = 150km		
	Pg eZ	18 07	08.5
	Sg eN	07	27.3
KSP	Δ = 178km		
	Pg eNEZ	18 07	11.6
	Sg eNEZ	07	32.9

JAN 11

GIG: φ = 50.104°N, λ = 19.180°E
H = 23:19:06.2, M = 2.5

OJC	Δ = 47km		
	Pg eZ	23 19	14.2
	Sg eE	19	20.5
RAC	Δ = 70km		
	Pg eZ	23 19	18.5
	Sg eN	19	28.1
NIE	Δ = 112km		
	Pg eZ	23 19	25.1
	Sg eN	19	40.4
KSP	Δ = 220km		
	Pg eNEZ	23 19	44.0
	Sn eNEZ	20	08.5

JAN 12

GIG: φ = 50.162°N, λ = 19.311°E
H = 21:39:18.0, M = 2.6

OJC	Δ = 36km		
	Pg eZ	21 39	24.8
	Sg eE	39	29.4
NIE	Δ = 110km		
	Pg eZ	21 39	37.3
	(Sg) eE	39	52.9
KSP	Δ = 226km		
	Pg eNEZ	21 39	55.9
	Sn eNEZ	40	21.4
	Sg eNEZ	40	22.5

JAN 13

GIG: φ = 50.066°N, λ = 18.425°E
H = 17:34:38.8, M = 3.3

RAC	Δ = 17km			
	Pg iZ	17 34	42.7	C
	Sg eNE	34	45.8	
OJC	Δ = 99km			
	Pg iZ	17 34	55.7	D
	Sg eN	35	08.6	
NIE	Δ = 154km			
	Pg eZ	17 35	04.6	
	Sg eE	35	25.4	
KSP	Δ = 174km			
	Pn eNEZ	17 35	06.7	
	Pg eNEZ	35	08.0	
	Sn eNEZ	35	27.6	
	Sg eNEZ	35	29.0	
KWP	Δ = 310km			
	Pn eZ	17 35	26.1	
	Pg eZ	35	37.8	
	Sn eNE	36	16.8	
GKP	Δ = 366km			
	Pn eZ	17 35	30.0	
	Pg eZ	35	46.5	
	Sn eNE	36	19.1	
SUW	Δ = 546km			
	Pn eZ	17 35	58.0	
	Pg eZ	36	16.3	
	Sn eNE	37	24.1	

JAN 13

φ = 50.38°N, λ = 18.95°E
H = 18:29:33.1, M = 2.3

OJC	Δ = 63km	
	Pg eZ	18 29 44.5
	Sg eE	29 52.8
NIE	Δ = 146km	
	Pg eZ	18 29 58.5
	Sg eE	30 17.5
KSP	Δ = 195km	
	Pg eZ	18 30 05.7
	Sg eNEZ	30 29.8

JAN 14

GIG: φ = 50.163°N, λ = 19.317°E
H = 00:39:49.3, M = 2.3

OJC	Δ = 35km	
	Pg eZ	00 39 55.0
	Sg eN	40 00.1
NIE	Δ = 109km	
	Pg eZ	00 40 07.6
	(Sg) eE	40 23.1
KSP	Δ = 227km	
	Pg eNEZ	00 40 28.7
	Sg eN	40 54.7

JAN 14

φ = 50.27°N, λ = 19.00°E
H = 04:02:22.6, M = 2.1

OJC	Δ = 57km	
	Pg eZ	04 02 33.2
	Sg iN	02 40.3
NIE	Δ = 133km	
	Pg eZ	04 02 46.3
	Sg eE	03 02.6
KSP	Δ = 202km	
	Pg eNEZ	04 02 56.9
	Sg eNEZ	03 21.0

JAN 14

GIG: φ = 50.068°N, λ = 18.460°E
H = 04:59:21.0, M = 2.1

RAC	Δ = 19km	
	Pg eZ	04 59 25.2
	Sg eNE	59 28.6
OJC	Δ = 97km	
	Pg eZ	04 59 37.6
	Sg eE	59 50.0
NIE	Δ = 152km	
	Pg eZ	04 59 47.4
	(Sg) eE	05 00 07.9

JAN 14

GIG: φ = 50.261°N, λ = 18.862°E
H = 13:07:49.1, M = 2.2

OJC	Δ = 67km	
	Pg eZ	13 08 01.7
	Sg eE	08 09.6
NIE	Δ = 140km	
	Pg eZ	13 08 13.7
	Sg eE	08 31.8
KSP	Δ = 193km	
	Pg eNEZ	13 08 21.7
	Sg eNEZ	08 44.3

JAN 14

GIG: φ = 50.164°N, λ = 19.316°E
H = 15:46:53.1, M = 2.4

OJC	Δ = 35km	
	Pg eZ	15 46 59.3
	Sg eN	47 04.4
NIE	Δ = 110km	
	Pg eZ	15 47 13.2
	(Sg) eN	47 27.4
KSP	Δ = 226km	
	(Pn) eNEZ	15 47 28.0
	Pg eE	47 30.9
	(Sg) eN	47 57.3

JAN 14

GIG: φ = 50.258°N, λ = 18.888°E
H = 23:38:21.0, M = 2.4

RAC	Δ = 54km	
	Pg eZ	23 38 31.2
	Sg eNE	38 37.9
OJC	Δ = 65km	
	Pg eZ	23 38 32.9
	Sg eN	38 41.3
NIE	Δ = 139km	
	Pg eZ	23 38 45.3
	Sg eE	39 03.6
KSP	Δ = 195km	
	Pg eNEZ	23 38 54.1
	Sg eNEZ	39 17.3

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JAN 14

GIG: φ = 50.103°N, λ = 19.179°E
H = 23:55:30.2, M = 2.3

OJC	Δ = 46km		
	Pg eZ	23 55 38.0	
	Sg eN	55 44.1	
NIE	Δ = 112km		
	Pg eZ	23 55 49.4	
	(Sg) eN	56 04.9	
KSP	Δ = 221km		
	Pg eNEZ	23 56 07.8	
	Sn eNEZ	56 32.1	

JAN 15

GIG: φ = 50.066°N, λ = 18.462°E
H = 00:41:45.8, M = 2.6

RAC	Δ = 19km		
	Pg iZ	00 41 50.2	D
	Sg iN	41 53.6	
OJC	Δ = 97km		
	Pg eZ	00 42 02.4	
	Sg eE	42 14.8	
NIE	Δ = 151km		
	Pg eZ	00 42 11.9	
	Sg eN	42 31.0	
KSP	Δ = 177km		
	Pn eZ	00 42 14.7	
	Sg eN	42 36.1	

JAN 17

GIG: φ = 50.162°N, λ = 19.316°E
H = 16:57:04.8, M = 2.4

OJC	Δ = 35km		
	Pg iZ	16 57 10.1	D
	Sg eN	57 14.8	
NIE	Δ = 110km		
	Pg eZ	16 57 23.7	
	Sg eN	57 38.6	
KSP	Δ = 227km		
	Pn eZ	16 57 40.6	
	Pg eZ	57 43.8	
	Sn eNEZ	58 07.7	

JAN 17

GIG: φ = 50.239°N, λ = 18.924°E
H = 21:25:34.5, M = 2.6

RAC	Δ = 55km		
	Pg eZ	21 25 44.8	
	Sg eNE	25 52.5	
OJC	Δ = 62km		
	Pg eZ	21 25 45.9	
	Sg eEN	25 53.9	
NIE	Δ = 136km		
	Pg eZ	21 25 58.0	
	Sg eE	26 15.8	
KSP	Δ = 198km		
	Pn eE	21 26 05.5	
	Pg eNEZ	26 07.8	
	Sg eNEZ	26 31.2	
KWP	Δ = 279km		
	Pg eZ	21 26 24.6	

JAN 18

φ = 50.26°N, λ = 18.90°E
H = 07:54:10.2, M = 2.3

OJC	Δ = 65km		
	Pg eZ	07 54 22.0	
	Sg eE	54 30.2	
NIE	Δ = 138km		
	Pg eZ	07 54 34.5	
	Sg eE	54 52.0	
KSP	Δ = 195km		
	Pg eNEZ	07 54 43.6	
	Sg eNEZ	55 06.4	

JAN 18

GIG: φ = 50.067°N, λ = 18.461°E
H = 09:35:43.3, M = 2.3

RAC	Δ = 19km		
	Pg eZ	09 35 47.7	
	Sg eNE	35 51.3	
OJC	Δ = 97km		
	Pg eZ	09 36 00.2	
	Sg eN	36 12.0	
NIE	Δ = 152km		
	Pg eZ	09 36 09.4	
	Sg eE	36 28.6	

JAN 18

φ = 50.28°N, λ = 18.90°E
H = 10:07:00.6, M = 2.3

OJC Δ = 64km
Pg eZ 10 07 12.3
Sg eE 07 20.5

NIE Δ = 139km
Pg eZ 10 07 24.8
Sg eE 07 42.9

KSP Δ = 195km
Pg eNEZ 10 07 33.7
Sg eNEZ 07 57.2

JAN 18

φ = 50.23°N, λ = 18.85°E
H = 13:14:33.9, M = 2.2

OJC Δ = 68km
Pg eZ 13 14 46.6
Sg eE 14 54.5

NIE Δ = 139km
Pg eZ 13 14 58.2
Sg eE 15 16.4

KSP Δ = 193km
Pg eNEZ 13 15 06.6
Sg eNEZ 15 30.1

JAN 18

GIG: φ = 50.232°N, λ = 19.038°E
H = 14:30:35.2, M = 2.4

OJC Δ = 55km
Pg eZ 14 30 44.9
Sg eN 30 52.8

NIE Δ = 129km
Pg eZ 14 30 57.7
Sg eE 31 14.5

KSP Δ = 206km
Pg eNEZ 14 31 09.6
Sg eNEZ 31 34.1

JAN 18

GIG: φ = 50.163°N, λ = 19.317°E
H = 17:14:03.5, M = 2.3

OJC Δ = 34km
Pg eZ 17 14 08.8
Sg eN 14 13.5

NIE Δ = 110km
Pg eZ 17 14 22.8
(Sg) eN 14 37.5

KSP Δ = 227km
Pn eNEZ 17 14 40.0
Pg eZ 14 42.8
Sg eE 15 09.3

JAN 18

GIG: φ = 50.233°N, λ = 19.037°E
H = 21:04:02.3, M = 2.3

OJC Δ = 54km
Pg eZ 21 04 12.4
Sg eE 04 19.6

NIE Δ = 130km
Pg eZ 21 04 25.2
Sg eN 04 41.7

KSP Δ = 205km
Pg eNEZ 21 04 36.9
Sg eNEZ 05 01.4

JAN 19

GIG: φ = 50.266°N, λ = 18.778°E
H = 18:15:30.6, M = 2.2

OJC Δ = 73km
Pg eZ 18 15 44.3
Sg eN 15 53.3

NIE Δ = 145km
Pg eZ 18 15 56.0
Sg eE 16 14.5

KSP Δ = 187km
Pn eNEZ 18 16 00.3
(Sg) eNEZ 16 23.7

JAN 19

GIG: φ = 50.254°N, λ = 18.762°E
H = 21:13:38.0, M = 2.2

OJC Δ = 74km
Pg eZ 21 13 51.5
Sg eN 14 01.2

NIE Δ = 145km
Pg eZ 21 14 03.2
(Sg) eN 14 22.5

KSP Δ = 186km
Pg eNEZ 21 14 09.7
Sg eNEZ 14 31.7

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JAN 20

GIG: φ = 50.261°N, λ = 18.860°E
H = 04:35:08.2, M = 2.5

RAC	Δ = 51km		
	Pg eZ	04 35	18.1
	Sg eNE	35	23.6
OJC	Δ = 67km		
	Pg eZ	04 35	20.5
	Sg eN	35	29.0
NIE	Δ = 140km		
	Pg eZ	04 35	32.9
	Sg eN	35	50.5
KSP	Δ = 193km		
	Pg eNEZ	04 35	41.1
	Sg eNEZ	36	03.9

JAN 20

GIG: φ = 50.066°N, λ = 18.424°E
H = 06:48:46.0, M = 2.3

RAC	Δ = 16km		
	Pg eZ	06 48	49.7
	Sg eNE	48	52.8
OJC	Δ = 100km		
	Pg eZ	06 49	02.9
	Sg eN	49	15.8
NIE	Δ = 154km		
	Pg eZ	06 49	12.7
	Sg eN	49	32.9
KSP	Δ = 174km		
	Pg eNEZ	06 49	15.8
	Sg eNEZ	49	35.9

JAN 20

GIG: φ = 50.103°N, λ = 19.178°E
H = 18:06:56.3, M = 2.3

OJC	Δ = 46km		
	Pg eZ	18 07	05.2
	Sg eN	07	11.2
NIE	Δ = 112km		
	Pg eZ	18 07	16.2
	(Sg) eE	07	31.0
KSP	Δ = 220km		
	Pg eNEZ	18 07	33.0
	Sn eNEZ	07	58.1

JAN 21

GIG: φ = 50.261°N, λ = 18.853°E
H = 21:58:41.1, M = 2.2

OJC	Δ = 68km		
	Pg eZ	21 58	53.9
	Sg eN	59	02.0
NIE	Δ = 141km		
	Pg eZ	21 59	06.0
	Sg eE	59	23.7
KSP	Δ = 192km		
	Pg eNEZ	21 59	13.3
	Sg eNEZ	59	36.1

JAN 22

GIG: φ = 50.245°N, λ = 18.982°E
H = 02:48:11.2, M = 2.3

OJC	Δ = 58km		
	Pg eZ	02 48	22.0
	Sg eN	48	29.7
NIE	Δ = 133km		
	Pg eZ	02 48	34.8
	Sg eN	48	50.7
KSP	Δ = 202km		
	Pg eNEZ	02 48	45.2
	Sg eNEZ	49	09.3

JAN 22

GIG: φ = 50.258°N, λ = 18.904°E
H = 16:18:54.2, M = 2.3

OJC	Δ = 64km		
	Pg eZ	16 19	05.9
	Sg eN	19	13.7
NIE	Δ = 138km		
	Pg eZ	16 19	19.0
	Sg eE	19	36.1
KSP	Δ = 196km		
	Pg eNEZ	16 19	27.3
	Sg eNEZ	19	50.5

JAN 23

GIG: φ = 50.260°N, λ = 18.908°E
H = 13:13:13.5, M = 2.3

OJC	Δ = 63km		
	Pg eZ	13 13	24.6
	Sg eN	13	33.7

NIE Δ = 138km
Pg eZ 13 13 37.2
Sg eN 13 55.6

KSP Δ = 196km
Pn eEZ 13 13 44.2
Pg eNEZ 13 46.1
Sn eNEZ 14 08.7

JAN 23

φ = 50.22°N, λ = 18.85°E
H = 21:26:48.2, M = 2.1

OJC Δ = 68km
Pg eZ 21 27 01.2
Sg eN 27 08.8

NIE Δ = 138km
Pg eZ 21 27 12.9
Sg eN 27 30.2

KSP Δ = 194km
Pg eNEZ 21 27 20.9
Sg eNEZ 27 43.8

JAN 23

φ = 50.24°N, λ = 18.85°E
H = 23:51:18.2, M = 2.1

OJC Δ = 67km
Pg eZ 23 51 30.7
Sg eN 51 38.9

NIE Δ = 139km
Pg eZ 23 51 42.9
Sg eN 52 00.3

KSP Δ = 193km
Pg eNEZ 23 51 51.3
Sg eNEZ 52 13.9

JAN 24

GIG: φ = 50.164°N, λ = 19.302°E
H = 16:08:40.7, M = 2.4

OJC Δ = 35km
Pg eZ 16 08 46.6
Sg eN 08 51.4

NIE Δ = 110km
Pg eZ 16 09 00.2
Sg eE 09 14.5

KSP Δ = 226km
Pg eNEZ 16 09 19.9
Sn eNEZ 09 44.3

JAN 25

GIG: φ = 50.258°N, λ = 18.889°E
H = 03:15:20.9, M = 2.6

RAC Δ = 53km
Pg eZ 03 15 31.5
Sg eNE 15 38.6

OJC Δ = 65km
Pg eZ 03 15 33.1
Sg eN 15 41.5

NIE Δ = 139km
Pg eZ 03 15 45.7
Sg eE 16 03.1

KSP Δ = 195km
Pg eNEZ 03 15 54.2
Sn eNEZ 16 14.3
Sg eNEZ 16 17.6

KWP Δ = 282km
Pg eZ 03 16 12.2

JAN 25

φ = 50.27°N, λ = 18.92°E
H = 05:16:00.5, M = 2.1

OJC Δ = 64km
Pg eZ 05 16 12.2
Sg eE 16 20.4

NIE Δ = 138km
Pg eZ 05 16 25.2
Sg eE 16 42.0

KSP Δ = 196km
Pg eNEZ 05 16 33.6
Sg eNEZ 16 57.1

JAN 25

φ = 50.17°N, λ = 19.32°E
H = 16:02:15.0, M = 2.3

OJC Δ = 34km
Pg iZ 16 02 20.6 D
Sg iN 02 25.4

NIE Δ = 110km
Pg eZ 16 02 33.5
Sg eE 02 48.3

KSP Δ = 227km
Pg eNEZ 16 02 54.5
Sn eNEZ 03 18.2

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JAN 25

GIG: φ = 50.052°N, λ = 18.453°E
H = 17:31:42.9, M = 2.1

RAC	Δ = 18km		
	Pg iZ	17 31 46.8	D
	Sg eNE	31 50.0	
OJC	Δ = 98km		
	Pg eZ	17 31 59.7	
	Sg eN	32 12.8	
NIE	Δ = 152km		
	Pg eZ	17 32 09.8	
	Sg eNE	32 29.0	

JAN 25

GIG: φ = 50.066°N, λ = 18.460°E
H = 18:31:01.5, M = 2.5

RAC	Δ = 19km		
	Pg iZ	18 31 06.0	D
	Sg eNE	31 09.4	
OJC	Δ = 97km		
	Pg eZ	18 31 18.2	
	Sg eN	31 30.1	
NIE	Δ = 152km		
	Pg eZ	18 31 28.1	
	Sg eE	31 47.0	
KSP	Δ = 176km		
	Pn eNEZ	18 31 29.9	
	Sg eNEZ	31 52.0	

JAN 25

GIG: φ = 50.248°N, λ = 18.709°E
H = 19:18:30.0, M = 2.4

OJC	Δ = 78km		
	Pg eZ	19 18 44.9	
	(Sg) eN	18 55.4	
NIE	Δ = 148km		
	Pg eZ	19 18 56.6	
	Sg eE	19 15.0	
KSP	Δ = 183km		
	Pg eNEZ	19 19 00.7	
	Sg eNEZ	19 23.0	

JAN 26

GIG: φ = 50.040°N, λ = 18.469°E
H = 00:36:07.2, M = 2.2

RAC	Δ = 20km		
	Pg iZ	00 36 11.6	D
	Sg eNE	36 15.3	
OJC	Δ = 97km		
	Pg eZ	00 36 24.1	
	Sg eE	36 36.9	
NIE	Δ = 150km		
	Pg eZ	00 36 33.9	
	Sg eN	36 52.5	
KSP	Δ = 178km		
	Pn eNEZ	00 36 35.4	
	Sg eNEZ	36 58.1	

JAN 26

GIG: φ = 50.259°N, λ = 18.888°E
H = 07:52:32.4, M = 2.5

OJC	Δ = 65km		
	Pg eZ	07 52 44.3	
	Sg eN	52 52.7	
NIE	Δ = 138km		
	Pg eZ	07 52 56.5	
	Sg eE	53 14.5	
KSP	Δ = 195km		
	Pg eNEZ	07 53 05.6	
	Sn eNEZ	53 26.4	
	Sg eNEZ	53 28.8	

JAN 26

GIG: φ = 50.352°N, λ = 18.981°E
H = 19:58:50.2, M = 2.3

OJC	Δ = 60km		
	Pg eZ	19 58 59.9	
	Sg eN	59 08.3	
NIE	Δ = 141km		
	Pg eZ	19 59 14.5	
	Sg eE	59 33.0	
KSP	Δ = 198km		
	Pg eNEZ	19 59 24.6	
	Sg eNEZ	59 46.5	

JAN 26

GIG: φ = 50.066°N, λ = 18.423°E
H = 20:00:02.3, M = 2.2

RAC	Δ = 17km		
	Pg eZ	20 00 06.1	
	Sg eNE	00 09.2	
OJC	Δ = 99km		
	Pg eZ	20 00 19.0	
	Sg eN	00 32.2	

NIE Δ = 154km
Pg eZ 20 00 29.1
Sg eN 00 48.6

JAN 26
GIG: φ = 50.234°N, λ = 19.038°E
H = 21:24:07.4, M = 2.2

OJC Δ = 55km
Pg eZ 21 24 17.5
Sg eE 24 24.8

NIE Δ = 130km
Pg eZ 21 24 30.1
Sg eN 24 46.7

KSP Δ = 205km
Pg eNEZ 21 24 41.9
Sg eNEZ 25 06.5

JAN 27
GIG: φ = 50.061°N, λ = 18.449°E
H = 04:12:30.1, M = 2.3

RAC Δ = 18km
Pg eZ 04 12 34.0
Sg eNE 12 37.4

OJC Δ = 98km
Pg eZ 04 12 47.0
Sg eN 12 59.6

NIE Δ = 152km
Pg eZ 04 12 56.6
Sg eN 13 15.8

JAN 27
GIG: φ = 50.057°N, λ = 18.450°E
H = 06:28:10.4, M = 2.3

RAC Δ = 18km
Pg iZ 06 28 14.6 C
Sg eNE 28 18.0

OJC Δ = 98km
Pg eZ 06 28 27.2
Sg eN 28 39.4

NIE Δ = 152km
Pg eZ 06 28 37.0
Sg eE 28 56.7

KSP Δ = 176km
Pg eNEZ 06 28 40.4
Sn eNEZ 29 00.1

JAN 27
GIG: φ = 50.262°N, λ = 18.853°E
H = 06:31:53.2, M = 2.9

RAC Δ = 52km
Pg eZ 06 32 02.9
Sg eNE 32 10.1

OJC Δ = 67km
Pg eZ 06 32 05.6
Sg eE 32 14.3

NIE Δ = 141km
Pg eZ 06 32 17.7
Sg eE 32 36.1

KSP Δ = 192km
Pn eNEZ 06 32 23.6
Pg iNEZ 32 25.9
Sg eNEZ 32 48.3

KWP Δ = 285km
Pn eZ 06 32 42.8
Sg eNE 33 24.4

JAN 27
GIG: φ = 50.232°N, λ = 19.035°E
H = 11:34:22.0, M = 2.4

OJC Δ = 55km
Pg eZ 11 34 31.8
Sg eE 34 39.3

NIE Δ = 130km
Pg eZ 11 34 45.0
Sg eN 35 01.6

KSP Δ = 205km
Pg eNEZ 11 34 56.2
Sg eNEZ 35 20.8

JAN 27
GIG: φ = 50.162°N, λ = 19.316°E
H = 11:48:05.4, M = 2.4

OJC Δ = 36km
Pg eZ 11 48 12.1
Sg eN 48 16.8

NIE Δ = 110km
Pg eZ 11 48 24.7
(Sg) eEN 48 39.8

KSP Δ = 226km
Pg eNEZ 11 48 43.1
Sn eNEZ 49 07.8

JAN 28

φ = 49.98°N, λ = 18.68°E
H = 02:35:25.2, M = 2.3

OJC	Δ = 84km		
	Pg eZ	02 35 39.1	
	Sg eN	35 49.9	
NIE	Δ = 133km		
	Pg eZ	02 35 48.4	
	(Sg) eN	36 06.3	
KSP	Δ = 195km		
	Pg eNEZ	02 35 58.8	
	Sn eNEZ	36 20.5	

JAN 28

GIG: φ = 50.162°N, λ = 19.316°E
H = 05:42:42.2, M = 2.5

OJC	Δ = 34km		
	Pg eZ	05 42 47.9	
	Sg iN	42 52.6	
NIE	Δ = 109km		
	Pg eZ	05 43 00.3	
	Sg eE	43 15.6	
KSP	Δ = 228km		
	Pg eNEZ	05 43 21.0	
	Sn eNEZ	43 45.7	

JAN 28

φ = 50.09°N, λ = 18.46°E
H = 08:50:12.8, M = 2.2

RAC	Δ = 19km		
	Pg eZ	08 50 17.0	
	Sg eNE	50 20.4	
OJC	Δ = 97km		
	Pg eZ	08 50 29.6	
	Sg eN	50 41.9	
NIE	Δ = 153km		
	Pg eZ	08 50 39.4	
	Sg eEN	50 58.3	

JAN 28

φ = 50.09°N, λ = 18.43°E
H = 16:52:00.6, M = 2.2

RAC	Δ = 16km		
	Pg eZ	16 52 04.1	
	Sg eNE	52 07.1	
OJC	Δ = 99km		
	Pg eZ	16 52 17.7	
	Sg eN	52 30.4	
NIE	Δ = 155km		
	Pg eZ	16 52 27.1	
	Sg eE	52 47.5	

JAN 28

GIG: φ = 50.064°N, λ = 18.424°E
H = 19:14:25.0, M = 2.4

RAC	Δ = 17km		
	Pg iZ	19 14 28.9	C
	Sg iNE	14 32.0	
OJC	Δ = 100km		
	Pg eZ	19 14 41.9	
	Sg eN	14 54.9	
NIE	Δ = 154km		
	Pg eZ	19 14 51.9	
	Sg eN	15 11.4	
KSP	Δ = 174km		
	Pg eZ	19 14 55.0	
	Sg eNEZ	15 15.3	

JAN 29

φ = 50.26°N, λ = 18.86°E
H = 13:54:41.1, M = 2.3

OJC	Δ = 67km		
	Pg eZ	13 54 53.6	
	Sg eE	55 01.6	
NIE	Δ = 140km		
	Pg eZ	13 55 05.9	
	Sg eN	55 23.0	
KSP	Δ = 193km		
	Pn eNEZ	13 55 12.1	
	Pg eNEZ	55 13.9	
	Sg eNEZ	55 36.5	

JAN 30

φ = 50.10°N, λ = 18.44°E
H = 01:13:04.4, M = 2.1

RAC	Δ = 18km		
	Pg iZ	01 13 08.3	D
	Sg iNE	13 11.4	
OJC	Δ = 98km		
	Pg eZ	01 13 21.9	
	Sg eN	13 34.3	
KSP	Δ = 173km		
	Pg eNEZ	01 13 33.4	
	Sg eNEZ	13 54.8	

Upper Silesian Coal Basin 2005

JAN 30

φ = 50.04°N, λ = 18.47°E
H = 03:02:21.1, M = 2.3

RAC Δ = 20km
Pg eZ 03 02 25.7
Sg eNE 02 28.8

OJC Δ = 97km
Pg eZ 03 02 38.1
Sg eN 02 49.8

NIE Δ = 150km
Pg iZ 03 02 48.1
Sg iZ 03 06.5

KSP Δ = 178km
Pg eNEZ 03 02 52.2
Sg eNEZ 03 12.9

JAN 30

φ = 50.38°N, λ = 18.90°E
H = 09:47:22.7, M = 2.1

OJC Δ = 66km
Pg eZ 09 47 34.6
Sg eE 47 43.7

NIE Δ = 148km
Pg eZ 09 47 48.6
Sg eEN 48 07.5

KSP Δ = 191km
Pg eNEZ 09 47 54.5
Sg eNEZ 48 18.6

JAN 31

φ = 50.27°N, λ = 19.12°E
H = 01:51:44.8, M = 2.1

OJC Δ = 49km
Pg eZ 01 51 53.6
Sg eE 52 00.1

NIE Δ = 128km
Pg eZ 01 52 06.9
Sg eE 52 23.6

KSP Δ = 210km
Pg eNEZ 01 52 20.3
Sg eNEZ 52 45.9

JAN 31

GIG: φ = 50.273°N, λ = 18.827°E
H = 08:14:42.4, M = 2.3

OJC Δ = 70km
Pg eZ 08 14 55.5
Sg eE 15 03.6

NIE Δ = 143km
Pg eZ 08 15 07.3
Sg eE 15 25.2

KSP Δ = 190km
Pg eNEZ 08 15 14.3
Sg eNEZ 15 37.6

JAN 31

φ = 50.26°N, λ = 18.88°E
H = 16:09:45.4, M = 2.2

OJC Δ = 66km
Pg eZ 16 09 57.4
Sg eE 10 06.0

NIE Δ = 140km
Pg eZ 16 10 09.8
Sg eE 10 27.9

KSP Δ = 194km
Pg eNEZ 16 10 18.0
Sg eNEZ 10 41.7

JAN 31

φ = 50.28°N, λ = 18.99°E
H = 17:38:26.0, M = 2.2

OJC Δ = 57km
Pg eZ 17 38 36.5
Sg eNE 38 43.9

NIE Δ = 135km
Pg eZ 17 38 49.5
Sg eN 39 07.1

KSP Δ = 201km
Pg eNEZ 17 39 00.2
Sg eNEZ 39 24.3

JAN 31

GIG: φ = 50.162°N, λ = 19.316°E
H = 21:13:33.5, M = 2.4

OJC Δ = 34km
Pg eZ 21 13 39.3
Sg eN 13 43.9

NIE Δ = 109km
Pg eZ 21 13 51.9
Sg eE 14 07.0

KSP Δ = 228km
Pg eNEZ 21 14 12.1
Sn eNEZ 14 36.8

Upper Silesian Coal Basin 2005

JAN 31

GIG: φ = 50.261°N, λ = 18.860°E
H = 22:53:32.8, M = 2.4

OJC Δ = 67km
Pg eZ 22 53 45.1
Sg eN 53 53.6

NIE Δ = 140km
Pg eZ 22 53 57.4
Sg eN 54 15.2

KSP Δ = 193km
Pg eNEZ 22 54 05.6
Sn eEZ 54 26.2
Sg eNEZ 54 28.3

FEB 1

GIG: φ = 50.233°N, λ = 19.035°E
H = 00:10:11.5, M = 2.2

OJC Δ = 55km
Pg eZ 00 10 21.4
Sg eN 10 28.9

NIE Δ = 129km
Pg eZ 00 10 34.2
Sg eE 10 50.4

KSP Δ = 205km
Pg eZ 00 10 45.8
Sg eE 11 10.8

FEB 1

GIG: φ = 50.233°N, λ = 19.038°E
H = 09:36:56.6, M = 2.2

OJC Δ = 54km
Pg eZ 09 37 06.1
Sg eE 37 13.7

NIE Δ = 129km
Pg eZ 09 37 19.2
Sg eN 37 35.9

KSP Δ = 206km
Pg eE 09 37 30.9
Sn eE 37 54.3

FEB 1

GIG: φ = 50.064°N, λ = 18.423°E
H = 19:48:27.5, M = 2.2

RAC Δ = 16km
Pg eZ 19 48 30.9
Sg eNE 48 34.1

OJC Δ = 100km
Pg eZ 19 48 44.4
Sg eN 48 57.7

NIE Δ = 154km
Pg eZ 19 48 54.3
Sg eN 49 14.4

FEB 1

GIG: φ = 50.037°N, λ = 18.432°E
H = 19:52:00.9, M = 2.4

RAC Δ = 18km
Pg iZ 19 52 04.9 D
Sg eNE 52 08.3

OJC Δ = 100km
Pg eZ 19 52 18.1
Sg eE 52 30.5

NIE Δ = 152km
Pg eZ 19 52 27.3
Sg eE 52 46.6

KSP Δ = 176km
Pn eE 19 52 29.2
Sg eZ 52 51.6

FEB 1

GIG: φ = 50.066°N, λ = 18.461°E
H = 19:54:39.9, M = 2.3

RAC Δ = 19km
Pg iZ 19 54 44.5 D
Sg eNE 54 47.8

OJC Δ = 97km
Pg eZ 19 54 56.6
Sg eN 55 08.6

NIE Δ = 152km
Pg eZ 19 55 06.2
Sg eE 55 25.3

KSP Δ = 176km
Pg eE 19 55 10.2
Sg eZ 55 30.8

FEB 2

GIG: φ = 50.104°N, λ = 19.178°E
H = 00:00:56.8, M = 2.6

OJC Δ = 47km
Pg eZ 00 01 05.8
Sg eN 01 11.9

RAC Δ = 70km
Pg eZ 00 01 09.7
Sg eN 01 18.2

NIE Δ = 112km
Pg eZ 00 01 16.8
Sg eN 01 31.3

KSP Δ = 220km
Pn eZ 00 01 32.1
Pg eZ 01 33.9
(Sg) eE 01 59.4

KWP Δ = 258km
Pg eZ 00 01 47.2
Sg eNE 02 15.5

FEB 2
GIG: φ = 50.233°N, λ = 19.037°E
H = 05:08:10.9, M = 2.3

OJC Δ = 54km
Pg eZ 05 08 20.7
Sg eE 08 28.0

NIE Δ = 129km
Pg eZ 05 08 33.3
Sg eN 08 49.9

KSP Δ = 206km
Pn eZ 05 08 44.0
(Sg) eN 09 09.7

FEB 2
φ = 50.26°N, λ = 18.86°E
H = 14:31:57.1, M = 2.1

OJC Δ = 67km
Pg eZ 14 32 10.0
Sg eE 32 17.9

NIE Δ = 140km
Pg eZ 14 32 21.7
Sg eN 32 39.6

KSP Δ = 193km
Pg eE 14 32 30.0
Sg eN 32 52.7

FEB 2
GIG: φ = 50.164°N, λ = 19.311°E
H = 16:34:12.5, M = 2.5

OJC Δ = 35km
Pg iZ 16 34 18.4 D
Sg iN 34 23.1

NIE Δ = 110km
Pg eZ 16 34 31.5
(Sg) eE 34 46.5

KSP Δ = 227km
Pn eE 16 34 49.4
Pg eE 34 51.8
Sn eN 35 16.5

FEB 2
GIG: φ = 50.234°N, λ = 19.038°E
H = 18:00:18.7, M = 2.3

OJC Δ = 54km
Pg eZ 18 00 28.7
Sg eN 00 35.8

NIE Δ = 130km
Pg eZ 18 00 42.0
Sg eE 00 57.6

KSP Δ = 205km
Pg eZ 18 00 53.2
(Sg) eN 01 17.2

FEB 3
GIG: φ = 50.058°N, λ = 18.449°E
H = 02:21:42.6, M = 2.0

RAC Δ = 19km
Pg iZ 02 21 47.1 D
Sg iNE 21 50.4

OJC Δ = 98km
Pg eZ 02 22 00.0
Sg eN 22 11.8

NIE Δ = 152km
Pg eZ 02 22 08.0
Sg eN 22 27.8

FEB 3
GIG: φ = 50.040°N, λ = 18.475°E
H = 02:53:32.7, M = 2.1

RAC Δ = 21km
Pg iZ 02 53 37.4 D
Sg eNE 53 40.8

OJC Δ = 97km
Pg eZ 02 53 49.9
Sg eE 54 02.1

NIE Δ = 149km
Pg eZ 02 53 57.6
Sg eE 54 17.5

KSP Δ = 179km
Pn eZ 02 54 01.2
(Sn) eE 54 21.9
Sg eE 54 24.2

FEB 3
GIG: φ = 50.237°N, λ = 19.071°E
H = 03:51:24.8, M = 2.6

OJC	Δ = 52km		
	Pg iZ	03 51 34.4	D
	Sg iE	51 41.3	
RAC	Δ = 65km		
	Pg eZ	03 51 37.0	
	Sg eNE	51 45.8	
NIE	Δ = 127km		
	Pg eZ	03 51 46.0	
	Sg eE	52 03.1	
KSP	Δ = 208km		
	Pn eZ	03 51 57.6	
	Pg eE	51 59.9	
	(Sg) eN	52 24.1	
KWP	Δ = 269km		
	P eZ	03 52 10.1	
	Sg eNE	52 44.4	

FEB 3
GIG: φ = 50.064°N, λ = 18.424°E
H = 05:18:49.1, M = 2.1

RAC	Δ = 17km		
	Pg iZ	05 18 53.1	D
	Sg iNE	18 56.2	
OJC	Δ = 99km		
	Pg eZ	05 19 06.1	
	Sg eN	19 18.5	
KSP	Δ = 174km		
	Pn eN	05 19 17.0	
	Sg eE	19 39.6	

FEB 3
GIG: φ = 50.234°N, λ = 19.035°E
H = 08:33:56.2, M = 2.3

OJC	Δ = 55km		
	Pg eZ	08 34 06.6	
	Sg eN	34 13.8	
NIE	Δ = 129km		
	Pg eZ	08 34 18.4	
	Sg eN	34 34.6	
KSP	Δ = 206km		
	Pg eZ	08 34 31.1	
	Sg eN	34 55.2	

FEB 3
GIG: φ = 50.169°N, λ = 19.302°E
H = 23:37:18.2, M = 2.3

OJC	Δ = 36km		
	Pg iZ	23 37 25.4	D
	Sg eN	37 29.3	
NIE	Δ = 110km		
	Pg eZ	23 37 36.5	
	Sg eN	37 50.9	
KSP	Δ = 226km		
	Pg eE	23 37 56.3	
	Sn eE	38 20.3	

FEB 3
GIG: φ = 50.213°N, λ = 19.062°E
H = 23:40:55.7, M = 2.3

OJC	Δ = 53km		
	Pg eZ	23 41 05.5	
	Sg eE	41 12.5	
NIE	Δ = 127km		
	Pg eZ	23 41 18.0	
	Sg eE	41 33.3	
KSP	Δ = 208km		
	Pg eE	23 41 30.6	
	Sn eN	41 54.0	

FEB 4
GIG: φ = 50.349°N, λ = 18.975°E
H = 00:40:49.4, M = 2.3

OJC	Δ = 60km		
	Pg eZ	00 41 00.6	
	Sg eN	41 08.4	
NIE	Δ = 141km		
	Pg eZ	00 41 12.9	
	Sg eE	41 32.1	
KSP	Δ = 197km		
	Pn eE	00 41 21.1	
	Pg eE	41 22.9	
	Sg eE	41 46.5	

FEB 4
GIG: φ = 50.261°N, λ = 18.862°E
H = 01:21:57.9, M = 2.5

RAC	Δ = 51km		
	Pg eZ	01 22 08.3	
	Sg eNE	22 15.5	

OJC Δ = 67km
Pg eZ 01 22 10.4
Sg eE 22 18.9

NIE Δ = 140km
Pg eZ 01 22 21.4
(Sg) eN 22 38.8

KSP Δ = 193km
Pg eZ 01 22 30.8
Sg eN 22 53.7

FEB 4
GIG: φ = 50.039°N, λ = 18.463°E
H = 01:52:20.4, M = 2.3

RAC Δ = 20km
Pg eZ 01 52 24.8
Sg eNE 52 28.4

OJC Δ = 98km
Pg eZ 01 52 37.4
Sg eE 52 49.7

NIE Δ = 150km
Pg eZ 01 52 45.9
Sg eN 53 06.0

KSP Δ = 178km
Pn eN 01 52 49.2
Sg eN 53 11.8

FEB 4
GIG: φ = 50.257°N, λ = 18.887°E
H = 03:56:24.9, M = 2.5

OJC Δ = 65km
Pg eZ 03 56 37.0
Sg eN 56 45.3

NIE Δ = 138km
Pg eZ 03 56 48.6
Sg eE 57 06.2

KSP Δ = 195km
Pn eZ 03 56 56.3
Pg eZ 56 57.9
Sn eZ 57 19.7
Sg eZ 57 21.8

FEB 4
GIG: φ = 50.232°N, λ = 19.038°E
H = 07:26:40.7, M = 2.3

OJC Δ = 55km
Pg iZ 07 26 51.2 C
Sg eE 26 58.2

NIE Δ = 129km
Pg eZ 07 27 02.2
Sg eN 27 19.0

KSP Δ = 206km
(Pg) eZ 07 27 14.6
Sn eN 27 38.4

FEB 4
GIG: φ = 50.261°N, λ = 18.862°E
H = 14:10:21.6, M = 2.3

OJC Δ = 66km
Pg eZ 14 10 33.4
Sg eE 10 41.4

NIE Δ = 140km
Pg eZ 14 10 46.0
Sg eN 11 03.9

KSP Δ = 194km
Pg eZ 14 10 55.0
Sg eN 11 17.5

FEB 5
GIG: φ = 50.169°N, λ = 19.302°E
H = 05:07:51.4, M = 2.5

OJC Δ = 36km
Pg eZ 05 07 58.4
Sg eN 08 03.1

NIE Δ = 111km
Pg eZ 05 08 09.7
Sg eE 08 24.9

KSP Δ = 226km
Pg eZ 05 08 29.6
Sg eN 08 55.9

KWP Δ = 251km
Pg eZ 05 08 34.0
Sg eNE 09 03.5

FEB 7
φ = 50.17°N, λ = 18.88°E
H = 23:59:09.3, M = 2.2

OJC Δ = 66km
Pg eZ 23 59 21.5
Sg eE 59 30.0

NIE Δ = 133km
Pg eZ 23 59 32.3
(Sg) eN 59 50.3

KSP Δ = 198km
Pg eE 23 59 42.9
Sg eN 24 00 06.0

FEB 8

φ = 50.16°N, λ = 19.32°E
H = 03:39:12.0, M = 2.5

OJC Δ = 35km
Pg iZ 03 39 18.3 D
Sg eN 39 23.0

NIE Δ = 109km
(Pg) eZ 03 39 29.4
Sg eN 39 44.6

KSP Δ = 228km
Pn eZ 03 39 49.2
Pg eZ 39 51.6
Sn eN 40 16.4

FEB 8
GIG: **φ = 50.066°N, λ = 18.460°E**
H = 09:15:10.0, M = 2.5

RAC Δ = 19km
Pg eZ 09 15 14.5
Sg eNE 15 17.9

OJC Δ = 97km
Pg eZ 09 15 26.8
Sg eE 15 39.1

NIE Δ = 151km
Pg eZ 09 15 35.3

KSP Δ = 177km
Pg eZ 09 15 40.5
Sg eN 16 00.5

FEB 8
GIG: **φ = 50.232°N, λ = 19.035°E**
H = 11:08:42.7, M = 2.2

OJC Δ = 55km
Pg iZ 11 08 53.3 C
Sg eE 08 59.7

NIE Δ = 129km
Pg eZ 11 09 04.8
Sg eE 09 21.1

KSP Δ = 205km
Pg eE 11 09 17.4
(Sg) eZ 09 41.1

FEB 9
GIG: **φ = 50.065°N, λ = 18.461°E**
H = 18:11:36.2, M = 2.3

RAC Δ = 19km
Pg eZ 18 11 40.8
Sg eNE 11 44.2

OJC Δ = 97km
Pg eZ 18 11 53.4
Sg eN 12 05.8

KSP Δ = 176km
Pg eE 18 12 05.7
Sn eE 12 25.8

FEB 10
GIG: **φ = 50.061°N, λ = 18.449°E**
H = 05:25:28.1, M = 2.6

RAC Δ = 19km
Pg eZ 05 25 32.7
Sg eNE 25 36.0

OJC Δ = 98km
Pg eZ 05 25 45.1
Sg eN 25 57.6

NIE Δ = 152km
Pg eZ 05 25 53.9
Sg eN 26 13.1

KSP Δ = 176km
Pn eZ 05 25 56.6
Sn eE 26 18.2
Sg eN 26 18.6

FEB 10
GIG: **φ = 50.067°N, λ = 18.424°E**
H = 05:41:16.8, M = 2.2

RAC Δ = 17km
Pg eZ 05 41 20.9
Sg eNE 41 24.0

OJC Δ = 99km
Pg eZ 05 41 34.1
(Sg) eE 41 47.8

NIE Δ = 154km
Pg eZ 05 41 42.5
(Sg) eN 42 02.1

FEB 10
GIG: **φ = 50.164°N, λ = 19.313°E**
H = 10:39:52.8, M = 2.5

OJC Δ = 35km
Pg iZ 10 39 59.9 D
(Sg) eN 40 04.6

NIE Δ = 109km
Pg eZ 10 40 11.0
Sg eE 40 25.7

KSP Δ = 227km
Pg eZ 10 40 31.4
Sn eN 40 55.6
Sg eN 40 57.9

FEB 10
GIG: φ = 50.234°N, λ = 19.035°E
H = 20:44:45.6, M = 2.2

OJC Δ = 55km
Pg eZ 20 44 56.2
Sg eE 45 03.2

NIE Δ = 129km
Pg eZ 20 45 07.5
Sg eN 45 23.9

KSP Δ = 205km
Pg eE 20 45 20.2
Sg eN 45 44.5

FEB 10
φ = 50.16°N, λ = 18.81°E
H = 22:50:07.8, M = 2.1

OJC Δ = 70km
Pg eZ 22 50 21.2
Sg eE 50 29.1

NIE Δ = 136km
Pg eZ 22 50 31.6
Sg eE 50 49.2

KSP Δ = 194km
Pg eE 22 50 40.8
Sg eN 51 03.7

FEB 11
GIG: φ = 50.259°N, λ = 18.907°E
H = 06:41:11.4, M = 2.3

OJC Δ = 64km
Pg eZ 06 41 23.6
Sg eE 41 31.7

NIE Δ = 137km
Pg eZ 06 41 34.7
Sg eE 41 52.4

KSP Δ = 196km
Pg eE 06 41 44.8
Sg eN 42 08.2

FEB 11
GIG: φ = 50.261°N, λ = 18.862°E
H = 09:59:46.1, M = 2.7

RAC Δ = 51km
Pg eZ 09 59 56.0
Sg eNE 10 00 03.7

OJC Δ = 67km
Pg eZ 09 59 58.5
Sg eE 10 00 07.0

NIE Δ = 140km
Pg eZ 10 00 10.3
Sg eE 00 27.8

KSP Δ = 193km
Pg eZ 10 00 19.1
Sg eN 00 41.9

FEB 11
φ = 50.20°N, λ = 19.10°E
H = 10:46:22.1, M = 2.2

OJC Δ = 56km
Pg eZ 10 46 32.4
Sg eE 46 39.5

NIE Δ = 128km
Pg eZ 10 46 44.1
(Sg) eE 47 01.8

KSP Δ = 205km
Pg eZ 10 46 56.8
Sg eN 47 21.8

FEB 11
φ = 50.02°N, λ = 18.45°E
H = 13:30:57.3, M = 2.3

RAC Δ = 20km
Pg eZ 13 31 01.5
Sg eNE 31 04.9

OJC Δ = 99km
Pg eZ 13 31 14.1
Sg eE 31 27.5

NIE Δ = 150km
Pg eZ 13 31 22.5
Sg eNE 31 42.5

KSP Δ = 179km
Pg eN 13 31 28.4

FEB 11

GIG: φ = 50.164°N, λ = 19.302°E
H = 17:42:48.1, M = 2.6

OJC	Δ = 36km		
	Pg eZ	17 42 55.3	
	Sg eN	43 00.0	
NIE	Δ = 110km		
	Pg eZ	17 43 06.5	
	Sg eE	43 21.1	
KSP	Δ = 226km		
	Pg eZ	17 43 26.6	
	Sg eN	43 52.9	

FEB 12

GIG: φ = 50.239°N, λ = 18.921°E
H = 04:08:48.2, M = 2.1

OJC	Δ = 63km		
	Pg eZ	04 09 00.0	
	Sg eE	09 08.1	
NIE	Δ = 135km		
	Pg eZ	04 09 11.2	
	Sg eE	09 28.6	
KSP	Δ = 198km		
	Pg eZ	04 09 21.8	
	Sg eN	09 44.9	

FEB 12

GIG: φ = 50.066°N, λ = 18.459°E
H = 04:46:01.5, M = 2.3

RAC	Δ = 19km		
	Pg eZ	04 46 06.2	
	Sg eNE	46 09.6	
OJC	Δ = 97km		
	Pg eZ	04 46 18.8	
	Sg eN	46 30.4	
NIE	Δ = 151km		
	Pg eZ	04 46 26.8	
KSP	Δ = 176km		
	Pn eZ	04 46 30.2	
	Sg eN	46 52.5	

FEB 12

φ = 50.34°N, λ = 18.93°E
H = 19:29:59.5, M = 2.3

OJC	Δ = 64km		
	Pg eZ	19 30 11.1	
	Sg eE	30 19.3	
NIE	Δ = 143km		
	Pg eZ	19 30 24.0	
	Sg eN	30 42.8	
KSP	Δ = 194km		
	Pg eZ	19 30 32.1	
	Sg eZ	30 56.0	

FEB 14

GIG: φ = 50.072°N, λ = 19.127°E
H = 10:19:52.6, M = 2.2

OJC	Δ = 51km		
	Pg eZ	10 20 02.1	
	Sg eNE	20 08.8	
NIE	Δ = 113km		
	Pg eZ	10 20 11.3	
KSP	Δ = 218km		
	Pg eE	10 20 29.6	
	Sn eN	20 53.3	

FEB 14

φ = 50.10°N, λ = 18.44°E
H = 23:13:19.2, M = 2.1

RAC	Δ = 20km		
	Pg iZ	23 13 23.8	D
	Sg eNE	13 26.8	
OJC	Δ = 100km		
	Pg eZ	23 13 36.4	
	Sg eN	13 49.3	
NIE	Δ = 150km		
	Pg eZ	23 13 44.5	
	Sg eE	14 04.5	
KSP	Δ = 179km		
	Pn eE	23 13 47.8	
	Sg eN	14 10.5	

FEB 15

GIG: φ = 50.234°N, λ = 19.033°E
H = 01:00:47.4, M = 2.1

OJC	Δ = 55km		
	Pg eZ	01 00 58.1	
	(Sg) eNE	01 05.5	
NIE	Δ = 129km		
	Pg eZ	01 01 09.6	
	Sg eN	01 26.2	
KSP	Δ = 205km		
	Pg eE	01 01 22.4	
	Sg eN	01 46.2	

FEB 15

GIG: φ = 50.162°N, λ = 19.307°E
H = 01:06:15.1, M = 2.6

OJC	Δ = 36km		
	Pg iZ	01 06 22.1	D
	Sg iN	06 26.8	
RAC	Δ = 80km		
	Pg eZ	01 06 30.4	
	(Sg) eNE	06 41.2	
NIE	Δ = 110km		
	Pg eZ	01 06 33.1	
	Sg eE	06 47.9	
KSP	Δ = 227km		
	Pg eZ	01 06 53.1	
	Sg eN	07 20.1	
KWP	Δ = 250km		
	Pg eZ	01 06 57.7	
	Sg eNE	07 28.2	
GKP	Δ = 373km		
	Pg eZ	01 07 24.0	

FEB 15

φ = 50.18°N, λ = 18.87°E
H = 03:21:02.2, M = 2.0

OJC	Δ = 67km		
	Pg eZ	03 21 15.1	
	Sg eE	21 22.6	
NIE	Δ = 134km		
	Pg eZ	03 21 25.7	
	Sg eN	21 42.6	
KSP	Δ = 197km		
	Pg eZ	03 21 35.7	
	Sg eN	21 59.0	

FEB 15

GIG: φ = 50.066°N, λ = 18.461°E
H = 14:04:46.0, M = 2.5

RAC	Δ = 19km		
	Pg iZ	14 04 50.2	D
	Sg iN	04 53.7	
OJC	Δ = 97km		
	Pg eZ	14 05 02.5	
	Sg eE	05 15.1	
NIE	Δ = 151km		
	(Pg) eZ	14 05 10.8	
	(Sg) eN	05 30.4	
KSP	Δ = 177km		
	Pn eZ	14 05 14.0	
	Pg eZ	05 16.9	
	Sn eN	05 36.2	

FEB 16

φ = 50.01°N, λ = 18.45°E
H = 03:57:40.9, M = 2.0

RAC	Δ = 20km		
	Pg eZ	03 57 45.5	
	Sg eNE	57 48.7	
OJC	Δ = 99km		
	Pg eZ	03 57 58.1	
	Sg eN	58 10.9	
NIE	Δ = 150km		
	Pg eZ	03 58 06.5	
	Sg eN	58 26.0	

FEB 16

GIG: φ = 50.259°N, λ = 18.887°E
H = 11:53:13.6, M = 2.4

OJC	Δ = 65km		
	Pg iZ	11 53 25.5	D
	Sg eE	53 33.7	
NIE	Δ = 138km		
	Pg eZ	11 53 36.6	
	Sg eN	53 54.8	
KSP	Δ = 195km		
	Pn eZ	11 53 45.2	
	Pg eZ	53 46.7	
	Sn eZ	54 08.4	
	Sg eZ	54 10.4	

FEB 16

GIG: φ = 50.164°N, λ = 19.302°E
H = 23:31:37.1, M = 2.5

OJC	Δ = 37km		
	Pg eZ	23 31 44.5	
	Sg eN	31 49.2	
NIE	Δ = 110km		
	Pg eZ	23 31 55.6	
	Sg eN	32 10.8	
KSP	Δ = 226km		
	Pg eZ	23 32 15.2	
	Sg eN	32 41.8	

FEB 17

φ = 50.16°N, λ = 18.81°E
H = 00:32:22.4, M = 2.2

OJC Δ = 72km
Pg eZ 00 32 36.0
Sg eN 32 44.4

NIE Δ = 136km
Pg eZ 00 32 46.0
Sg eE 33 03.7

KSP Δ = 194km
Pg eE 00 32 55.2
Sg eN 33 18.7

FEB 17
GIG: **φ = 50.245°N, λ = 18.922°E**
H = 01:10:37.4, M = 2.3

RAC Δ = 55km
Pg eZ 01 10 48.5
Sg eNE 10 55.9

OJC Δ = 62km
Pg eZ 01 10 49.3
Sg eE 10 57.5

NIE Δ = 135km
Pg eZ 01 10 59.9
(Sg) eE 11 17.1

KSP Δ = 198km
Pg eZ 01 11 11.1
Sg eN 11 34.2

FEB 17
GIG: **φ = 50.261°N, λ = 18.860°E**
H = 12:42:34.1, M = 2.2

OJC Δ = 67km
Pg eZ 12 42 46.9
Sg eZ 42 54.8

NIE Δ = 140km
Pg eZ 12 42 58.5
(Sg) eE 43 15.3

KSP Δ = 193km
Pg eE 12 43 06.7
Sg eN 43 29.9

FEB 17
GIG: **φ = 50.067°N, λ = 18.459°E**
H = 16:39:02.1, M = 2.2

RAC Δ = 19km
Pg eZ 16 39 06.7
Sg eNE 39 09.4

OJC Δ = 97km
Pg eZ 16 39 19.0
Sg eN 39 32.0

NIE Δ = 152km
Pg eZ 16 39 27.4
Sg eE 39 47.1

KSP Δ = 176km
Pn eZ 16 39 30.5
Sg eN 39 52.6

FEB 18
GIG: **φ = 50.234°N, λ = 19.040°E**
H = 00:45:45.0, M = 2.2

OJC Δ = 54km
Pg eZ 00 45 55.1
Sg eN 46 02.3

NIE Δ = 128km
Pg eZ 00 46 06.6
Sg eN 46 23.0

KSP Δ = 206km
Pg eE 00 46 19.6
Sn eN 46 42.8

FEB 18
GIG: **φ = 50.103°N, λ = 19.178°E**
H = 12:52:16.9, M = 2.4

OJC Δ = 46km
Pg eZ 12 52 25.6
Sg eN 52 31.8

NIE Δ = 111km
Pg eZ 12 52 35.3
Sg eE 52 50.7

KSP Δ = 221km
Pn eE 12 52 52.9
Sn eN 53 19.3

FEB 18
GIG: **φ = 50.072°N, λ = 19.128°E**
H = 15:22:04.4, M = 2.3

OJC Δ = 51km
Pg eZ 15 22 14.1
Sg eN 22 20.8

NIE Δ = 112km
Pg eZ 15 22 23.2

KSP Δ = 218km
Pg eZ 15 22 41.6
Sg eZ 23 06.6

FEB 18

GIG: φ = 50.056°N, λ = 18.448°E
H = 19:18:01.5, M = 2.1

RAC	Δ = 19km		
	Pg eZ	19 18 05.5	
	Sg eNE	18 08.7	
NIE	Δ = 152km		
	Pg eZ	19 18 26.7	
	Sg eN	18 46.5	
KSP	Δ = 176km		
	Pg eZ	19 18 32.4	
	Sn eE	18 51.1	

FEB 19

GIG: φ = 50.040°N, λ = 18.462°E
H = 05:57:47.3, M = 2.2

RAC	Δ = 20km		
	Pg iZ	05 57 52.4	D
	Sg eNE	57 55.9	
OJC	Δ = 98km		
	Pg eZ	05 58 04.7	
	Sg eN	58 17.2	
NIE	Δ = 150km		
	Pg eZ	05 58 12.2	
	Sg eN	58 31.9	
KSP	Δ = 178km		
	Pn eZ	05 58 16.2	
	Sg eN	58 38.7	

FEB 19

GIG: φ = 50.260°N, λ = 18.863°E
H = 07:40:58.6, M = 2.5

OJC	Δ = 67km		
	Pg eZ	07 41 11.0	
	Sg eNE	41 19.7	
NIE	Δ = 140km		
	Pg eZ	07 41 21.8	
	(Sg) eN	41 39.5	
KSP	Δ = 193km		
	(Pn) eZ	07 41 30.8	
	Pg eZ	41 31.8	
	Sn eE	41 53.5	
	Sg eZ	41 54.6	
KWP	Δ = 284km		
	Pg eZ	07 41 50.3	

FEB 19

GIG: φ = 50.164°N, λ = 19.309°E
H = 08:39:57.0, M = 2.4

OJC	Δ = 36km		
	Pg eZ	08 40 04.2	
	Sg eN	40 08.9	
NIE	Δ = 110km		
	Pg eZ	08 40 15.7	
	Sg eE	40 30.7	
KSP	Δ = 226km		
	Pg eZ	08 40 34.6	
	Sg eN	41 01.7	

FEB 19

GIG: φ = 50.234°N, λ = 19.040°E
H = 10:56:02.2, M = 2.1

OJC	Δ = 55km		
	Pg eZ	10 56 12.6	
	Sg eN	56 19.8	
NIE	Δ = 129km		
	(Pg) eZ	10 56 23.2	
	Sg eN	56 40.5	
KSP	Δ = 205km		
	Pg eZ	10 56 36.8	
	Sg eZ	57 01.2	

FEB 21

GIG: φ = 50.234°N, λ = 19.038°E
H = 18:40:52.4, M = 2.1

OJC	Δ = 55km		
	Pg eZ	18 41 03.1	
	Sg eN	41 10.1	
NIE	Δ = 129km		
	Pg eZ	18 41 14.5	
	Sg eE	41 31.5	
KSP	Δ = 205km		
	Pn eZ	18 41 24.1	
	Pg eZ	41 27.0	
	Sg eN	41 51.1	

FEB 21

φ = 50.16°N, λ = 18.81°E
H = 21:45:23.0, M = 1.9

OJC	Δ = 71km		
	Pg eZ	21 45 36.5	
	Sg eE	45 44.5	

NIE Δ = 136km
Pg eZ 21 45 46.6
Sg eN 46 04.5

KSP Δ = 194km
Pg eZ 21 45 55.9
Sg eN 46 19.3

FEB 22
GIG: φ = 50.064°N, λ = 18.423°E
H = 07:15:24.2, M = 2.3

RAC Δ = 17km
Pg eZ 07 15 28.3
Sg eNE 15 31.4

OJC Δ = 100km
Pg eZ 07 15 41.5
Sg eNE 15 54.1

NIE Δ = 154km
Pg iZ 07 15 49.8 D
Sg eN 16 10.2

KSP Δ = 174km
Pn eZ 07 15 52.5
Sg eZ 16 14.7

FEB 22
GIG: φ = 50.066°N, λ = 18.464°E
H = 13:03:02.7, M = 2.1

RAC Δ = 19km
Pg eZ 13 03 07.4
Sg eNE 03 10.6

OJC Δ = 97km
Pg eZ 13 03 19.9
Sg eE 03 31.9

KSP Δ = 176km
Pg eZ 13 03 32.1
Sg eN 03 53.4

FEB 22
GIG: φ = 50.067°N, λ = 18.459°E
H = 13:13:20.0, M = 2.4

RAC Δ = 19km
Pg eZ 13 13 24.5
Sg eNE 13 27.7

OJC Δ = 97km
Pg eZ 13 13 36.8
Sg eN 13 49.9

NIE Δ = 151km
Pg eZ 13 13 45.2
Sg eN 14 05.0

KSP Δ = 176km
Pg eZ 13 13 50.9
Sg eN 14 11.6

FEB 22
GIG: φ = 50.164°N, λ = 19.300°E
H = 13:26:38.4, M = 2.5

OJC Δ = 37km
Pg eZ 13 26 45.0
Sg iN 26 49.7

NIE Δ = 111km
Pg eZ 13 26 57.6
Sg eE 27 12.5

KSP Δ = 225km
Pg eZ 13 27 16.1
Sg eN 27 43.0

FEB 22
GIG: φ = 50.247°N, λ = 18.875°E
H = 14:03:09.4, M = 2.3

OJC Δ = 66km
Pg eZ 14 03 22.1
Sg eE 03 30.1

NIE Δ = 138km
Pg eZ 14 03 33.0
(Sg) eE 03 50.3

KSP Δ = 194km
Pg eZ 14 03 42.4
Sg eN 04 05.0

FEB 22
φ = 50.18°N, λ = 18.99°E
H = 23:12:14.0, M = 2.0

OJC Δ = 58km
Pg eZ 23 12 24.7
Sg eN 12 31.9

NIE Δ = 127km
Pg eZ 23 12 36.3
Sg eN 12 52.6

KSP Δ = 205km
Pg eE 23 12 48.9
Sg eN 13 13.2

FEB 22
GIG: φ = 50.271°N, λ = 18.915°E
H = 23:54:19.4, M = 2.3

OJC Δ = 63km
Pg eZ 23 54 31.2
Sg eN 54 39.3

NIE Δ = 138km
Pg eZ 23 54 42.6
(Sg) eE 54 59.7

KSP Δ = 196km
Pg eZ 23 54 52.7
Sg eN 55 16.1

FEB 23
GIG: φ = 50.354°N, λ = 18.871°E
H = 14:41:40.1, M = 2.9

RAC Δ = 56km
Pg eZ 14 41 51.9
Sg eNE 41 59.2

OJC Δ = 68km
Pg eZ 14 41 52.8
Sg eN 42 01.5

NIE Δ = 146km
Pg eZ 14 42 04.7
(Sg) eN 42 22.9

KSP Δ = 190km
Pg eZ 14 42 11.8
Sn eE 42 33.1
Sg eN 42 35.5

KWP Δ = 286km
Pn eZ 14 42 25.6
Pg eZ 42 33.9
Sg eNE 43 04.2

FEB 23
GIG: φ = 50.259°N, λ = 18.887°E
H = 17:14:25.2, M = 2.3

OJC Δ = 65km
Pg eZ 17 14 37.6
Sg eN 14 46.0

NIE Δ = 138km
Pg eZ 17 14 48.3
Sg eE 15 06.7

KSP Δ = 195km
Pg eZ 17 14 58.7
Sg eN 15 21.7

FEB 23
φ = 50.20°N, λ = 18.89°E
H = 23:10:36.2, M = 2.2

OJC Δ = 65km
Pg eZ 23 10 48.4
Sg iE 10 56.1

NIE Δ = 134km
Pg eZ 23 10 58.9
Sg eN 11 16.8

KSP Δ = 197km
Pg eE 23 11 09.7
Sg eN 11 33.0

FEB 24
GIG: φ = 50.164°N, λ = 19.309°E
H = 04:45:30.9, M = 2.5

OJC Δ = 36km
Pg eZ 04 45 38.1
Sg eN 45 42.7

NIE Δ = 110km
Pg eZ 04 45 49.2
Sg eE 46 04.3

KSP Δ = 226km
Pg eZ 04 46 08.8
Sg eN 46 35.3

FEB 24
GIG: φ = 50.252°N, λ = 18.909°E
H = 21:36:46.6, M = 2.4

OJC Δ = 64km
Pg eZ 21 36 58.9
Sg eE 37 07.1

NIE Δ = 137km
Pg eZ 21 37 09.4
(Sg) eN 37 26.8

KSP Δ = 197km
Pg eZ 21 37 20.3
Sg eN 37 43.1

FEB 24
GIG: φ = 50.255°N, λ = 18.907°E
H = 23:29:02.9, M = 2.4

RAC Δ = 54km
Pg eZ 23 29 13.7
Sg eNE 29 21.5

OJC Δ = 64km
Pg eZ 23 29 14.8
Sg eE 29 23.2

NIE Δ = 137km
(Pg) eZ 23 29 25.4
Sg eN 29 43.5

KSP Δ = 197km
Pn eZ 23 29 33.8
Pg eZ 29 36.4
Sn eE 29 57.3
Sg eN 30 00.1

FEB 24
GIG: φ = 50.061°N, λ = 18.449°E
H = 23:43:39.7, M = 2.2

RAC Δ = 18km
Pg eZ 23 43 44.0
Sg eNE 43 47.2

OJC Δ = 98km
Pg eZ 23 43 57.1
Sg eN 44 09.8

NIE Δ = 152km
Pg eZ 23 44 05.0
Sg eN 44 24.9

FEB 25
GIG: φ = 50.252°N, λ = 18.882°E
H = 00:19:15.7, M = 2.3

RAC Δ = 52km
Pg eZ 00 19 26.6
Sg eNE 19 33.7

OJC Δ = 65km
Pg eZ 00 19 27.9
Sg eE 19 36.4

NIE Δ = 138km
Pg eZ 00 19 38.7
Sg eE 19 56.6

KSP Δ = 195km
Pn eZ 00 19 46.1
Pg eZ 19 49.0
Sg eZ 20 11.9

FEB 25
GIG: φ = 50.261°N, λ = 18.860°E
H = 01:09:46.4, M = 2.2

OJC Δ = 67km
Pg eZ 01 09 59.0
Sg eE 10 07.7

NIE Δ = 140km
Pg eZ 01 10 09.7
Sg eE 10 28.2

KSP Δ = 193km
Pg eZ 01 10 19.3
(Sg) eN 10 43.2

FEB 25
φ = 50.17°N, λ = 18.90°E
H = 01:27:15.6, M = 2.0

OJC Δ = 65km
Pg eZ 01 27 28.1
Sg eE 27 35.6

NIE Δ = 132km
Pg eZ 01 27 38.5
Sg eE 27 56.0

KSP Δ = 199km
Pg eE 01 27 49.4
Sg eN 28 12.9

FEB 25
φ = 50.18°N, λ = 18.90°E
H = 02:13:17.3, M = 2.4

RAC Δ = 52km
Pg eZ 02 13 27.6
Sg eNE 13 35.0

OJC Δ = 64km
Pg eZ 02 13 29.1
Sg eN 13 37.2

NIE Δ = 133km
Pg eZ 02 13 40.2
Sg eE 13 57.6

KSP Δ = 199km
Pn eZ 02 13 48.4
Pg eZ 13 50.3
Sn eN 14 12.8

KWP Δ = 279km
Pn eZ 02 14 05.8
Sn eNE 14 39.4

FEB 25
GIG: φ = 50.164°N, λ = 19.309°E
H = 16:20:12.5, M = 2.5

OJC Δ = 36km
Pg eZ 16 20 19.7
Sg eN 20 24.4

NIE Δ = 110km
Pg eZ 16 20 30.7
Sg eE 20 45.8

KSP Δ = 226km
Pg eZ 16 20 50.5
Sg eN 21 17.1

FEB 25

GIG: φ = 50.063°N, λ = 18.426°E
H = 20:21:03.3, M = 2.1

RAC	Δ = 17km		
	Pg eZ	20 21 07.6	
	Sg eNE	21 10.6	
OJC	Δ = 99km		
	Pg eZ	20 21 20.8	
	Sg eN	21 33.5	
NIE	Δ = 153km		
	Pg eZ	20 21 29.0	
	Sg eN	21 49.3	

FEB 26

GIG: φ = 50.259°N, λ = 18.864°E
H = 13:06:08.1, M = 2.6

RAC	Δ = 52km		
	Pg eZ	13 06 17.9	
	Sg eNE	06 24.4	
OJC	Δ = 66km		
	Pg eZ	13 06 20.6	
	Sg eN	06 28.8	
NIE	Δ = 139km		
	Pg eZ	13 06 31.6	
	Sg eE	06 49.6	
KSP	Δ = 194km		
	Pg eZ	13 06 41.2	
	Sg eN	07 03.9	

FEB 28

GIG: φ = 50.066°N, λ = 18.428°E
H = 08:25:23.5, M = 2.8

RAC	Δ = 17km		
	Pg iZ	08 25 27.7	D
	Sg eNE	25 30.8	
OJC	Δ = 99km		
	Pg eZ	08 25 40.6	
	Sg eN	25 53.3	
NIE	Δ = 153km		
	Pg eZ	08 25 49.0	
	Sg eN	26 09.0	
KSP	Δ = 175km		
	Pn eZ	08 25 51.7	
	Sn eE	26 12.7	
	Sg eE	26 14.2	

MAR 1

GIG: φ = 50.163°N, λ = 19.304°E
H = 03:12:56.9, M = 2.3

OJC	Δ = 36km		
	Pg iZ	03 13 04.1	D
	Sg iN	13 08.7	
NIE	Δ = 110km		
	Pg eZ	03 13 15.1	
	Sg eE	13 29.8	
KSP	Δ = 226km		
	Pg eZ	03 13 35.1	
	Sg eN	14 02.1	

MAR 1

φ = 50.28°N, λ = 18.71°E
H = 08:49:23.6, M = 2.0

OJC	Δ = 78km		
	Pg eZ	08 49 37.4	
	(Sg) eE	49 49.0	
NIE	Δ = 150km		
	Pg eZ	08 49 48.2	
	Sg eE	50 07.5	
KSP	Δ = 182km		
	Pg eZ	08 49 54.4	
	Sg eN	50 16.4	

MAR 1

GIG: φ = 50.238°N, λ = 18.922°E
H = 14:09:41.7, M = 2.1

OJC	Δ = 63km		
	Pg eZ	14 09 53.4	
	Sg eE	10 00.8	
NIE	Δ = 136km		
	Pg eZ	14 10 04.4	
	Sg eE	10 21.2	
KSP	Δ = 197km		
	Pg eZ	14 10 14.9	

MAR 1

GIG: φ = 50.067°N, λ = 18.468°E
H = 15:07:17.9, M = 2.2

RAC	Δ = 20km		
	Pg eZ	15 07 22.4	
	Sg eNE	07 25.7	
OJC	Δ = 96km		
	Pg eZ	15 07 34.6	
	Sg eN	07 47.4	

NIE Δ = 151km
Pg eZ 15 07 42.5
Sg eE 08 01.5

KSP Δ = 177km
Pg eZ 15 07 47.0
Sg eE 08 08.4

MAR 1

φ = 50.17°N, λ = 19.14°E
H = 16:10:29.5, M = 2.2

OJC Δ = 48km
Pg eZ 16 10 38.2
Sg eN 10 44.3

NIE Δ = 119km
Pg eZ 16 10 49.2
Sg eE 11 05.1

KSP Δ = 215km
Pg eE 16 11 04.7
Sg eN 11 30.2

MAR 1
GIG: **φ = 50.072°N, λ = 19.127°E**
H = 21:42:33.9, M = 2.2

OJC Δ = 51km
Pg eZ 21 42 43.8
Sg eN 42 50.4

NIE Δ = 112km
Pg eZ 21 42 52.7
(Sg) eE 43 08.7

KSP Δ = 218km
Pg eE 21 43 11.3
Sg eE 43 36.5

MAR 2

φ = 50.19°N, λ = 18.85°E
H = 00:33:34.6, M = 2.0

OJC Δ = 67km
Pg eZ 00 33 47.0
Sg eE 33 55.4

NIE Δ = 136km
Pg eZ 00 33 57.6
Sg eN 34 15.8

KSP Δ = 195km
Pg eZ 00 34 07.8
Sg eN 34 31.0

MAR 2
GIG: **φ = 50.068°N, λ = 18.461°E**
H = 03:15:17.2, M = 2.1

RAC Δ = 19km
Pg iZ 03 15 21.8 D
Sg eNE 15 24.7

OJC Δ = 97km
Pg eZ 03 15 33.8
Sg eN 15 46.4

NIE Δ = 152km
Pg eZ 03 15 42.5
(Sg) eN 15 59.8

KSP Δ = 176km
Pg eZ 03 15 46.3
Sg eN 16 07.8

MAR 2
GIG: **φ = 50.261°N, λ = 18.889°E**
H = 13:04:08.7, M = 2.3

OJC Δ = 65km
Pg eZ 13 04 21.1
Sg eE 04 29.5

NIE Δ = 138km
Pg eZ 13 04 31.8
Sg eE 04 50.1

KSP Δ = 195km
Pg eZ 13 04 42.0
Sg eN 05 05.1

MAR 2
GIG: **φ = 50.223°N, λ = 18.829°E**
H = 16:47:59.4, M = 2.5

OJC Δ = 70km
Pg eZ 16 48 12.0
Sg eN 48 21.2

NIE Δ = 140km
Pg eZ 16 48 22.1
Sg eN 48 40.5

KSP Δ = 192km
Pg eZ 16 48 32.1
Sg eZ 48 54.4

MAR 2
GIG: **φ = 50.170°N, λ = 19.297°E**
H = 22:09:37.8, M = 2.4

OJC Δ = 36km
Pg eZ 22 09 44.6
Sg eN 09 49.2

NIE Δ = 111km
Pg eZ 22 09 55.6
Sg eE 10 10.9

KSP Δ = 226km
Pg eZ 22 10 15.7
Sg eN 10 42.6

MAR 3

φ = 50.20°N, λ = 18.84°E
H = 01:05:37.7, M = 2.0

OJC Δ = 69km
Pg eZ 01 05 50.6
Sg eN 05 59.0

NIE Δ = 137km
Pg eZ 01 06 01.4
Sg eN 06 19.7

KSP Δ = 194km
Pg eE 01 06 11.0
Sg eN 06 33.4

MAR 3
GIG: **φ = 50.236°N, λ = 19.038°E**
H = 17:23:33.6, M = 2.3

OJC Δ = 54km
Pg eZ 17 23 43.8
Sg eN 23 51.1

NIE Δ = 129km
Pg eZ 17 23 55.2
Sg eN 24 11.6

KSP Δ = 206km
Pg eE 17 24 08.2
Sg eN 24 32.5

MAR 4
GIG: **φ = 50.066°N, λ = 18.465°E**
H = 01:07:37.5, M = 2.4

RAC Δ = 19km
Pg eZ 01 07 42.0
Sg eNE 07 45.0

OJC Δ = 97km
Pg eZ 01 07 54.7
Sg eE 08 06.1

NIE Δ = 151km
Pg eZ 01 08 02.2
Sg eE 08 21.3

KSP Δ = 177km
Pg eE 01 08 06.9
Sg eN 08 28.1

MAR 4

φ = 50.20°N, λ = 18.72°E
H = 04:33:32.7, M = 2.1

OJC Δ = 77km
Pg eZ 04 33 46.7
Sg eN 33 55.3

NIE Δ = 143km
Pg eZ 04 33 56.8
Sg eE 34 14.9

KSP Δ = 186km
Pg eE 04 34 03.6
Sg eN 34 26.4

MAR 4
GIG: **φ = 50.064°N, λ = 18.422°E**
H = 05:00:27.1, M = 2.6

RAC Δ = 17km
Pg iZ 05 00 31.0 C
Sg eNE 00 33.6

OJC Δ = 100km
Pg eZ 05 00 44.0
Sg eN 00 57.0

NIE Δ = 154km
Pg eZ 05 00 52.4
Sg eN 01 12.5

KSP Δ = 174km
Pn eZ 05 00 55.2
Pg eZ 00 56.7
Sn eN 01 16.0
Sg eN 01 17.4

MAR 4
GIG: **φ = 50.068°N, λ = 18.460°E**
H = 13:17:42.4, M = 2.5

RAC Δ = 19km
Pg iZ 13 17 46.8 D
Sg eNE 17 49.8

OJC Δ = 97km
Pg eZ 13 17 59.1
(Sg) eN 18 12.7

NIE Δ = 152km
Pg eZ 13 18 07.3
Sg eN 18 26.2

KSP Δ = 176km
Pg eZ 13 18 10.9
Sg eN 18 32.8

MAR 4
GIG: φ = 50.250°N, λ = 18.709°E
H = 16:25:53.2, M = 2.2

OJC Δ = 78km
Pg eZ 16 26 07.3
Sg eE 26 17.8

NIE Δ = 148km
Pg eZ 16 26 18.0
Sg eE 26 35.5

KSP Δ = 183km
Pg eZ 16 26 24.4
Sg eN 26 45.8

MAR 4
φ = 50.20°N, λ = 19.27°E
H = 19:57:15.4, M = 2.4

OJC Δ = 38km
Pg eZ 19 57 22.3
Sg eN 57 27.0

NIE Δ = 115km
Pg eZ 19 57 34.8
Sg eE 57 50.1

KSP Δ = 222km
Pg eZ 19 57 53.2
Sg eN 58 19.8

MAR 4
GIG: φ = 50.239°N, λ = 18.922°E
H = 20:26:34.4, M = 2.1

OJC Δ = 62km
Pg eZ 20 26 45.6
Sg eE 26 53.8

NIE Δ = 135km
Pg eZ 20 26 56.9
Sg eE 27 14.1

KSP Δ = 198km
Pg eZ 20 27 07.5
Sg eN 27 30.6

MAR 4
GIG: φ = 50.234°N, λ = 19.040°E
H = 20:47:15.3, M = 2.0

OJC Δ = 54km
Pg eZ 20 47 25.1
Sg eN 47 32.3

NIE Δ = 128km
Pg eZ 20 47 36.2
Sg eN 47 52.8

KSP Δ = 206km
Pg eZ 20 47 50.1
Sg eZ 48 13.6

MAR 5
GIG: φ = 50.071°N, λ = 19.125°E
H = 03:30:10.3, M = 2.2

OJC Δ = 51km
Pg eZ 03 30 19.5
Sg iN 30 26.2

NIE Δ = 112km
Pg eZ 03 30 28.3
Sg eN 30 44.5

KSP Δ = 219km
Pg eZ 03 30 46.4
Sg eN 31 13.8

MAR 5
GIG: φ = 50.061°N, λ = 18.447°E
H = 06:56:06.0, M = 2.2

RAC Δ = 19km
Pg eZ 06 56 10.0
Sg eNE 56 13.2

OJC Δ = 98km
Pg eZ 06 56 22.6
Sg eE 56 34.9

NIE Δ = 152km
Pg eZ 06 56 30.6
Sg eN 56 50.1

KSP Δ = 176km
Pg eE 06 56 35.9
Sg eN 56 56.7

MAR 7
GIG: φ = 50.257°N, λ = 18.884°E
H = 17:04:36.0, M = 2.3

OJC Δ = 65km
Pg eZ 17 04 47.9
Sg eE 04 56.5

NIE Δ = 138km
Pg eZ 17 04 58.8
Sg eE 05 16.8

KSP Δ = 195km
Pg eZ 17 05 09.1
Sn eZ 05 30.8
Sg eZ 05 32.7

MAR 7
GIG: φ = 50.171°N, λ = 19.298°E
H = 21:43:07.4, M = 2.4

OJC Δ = 36km
Pg eZ 21 43 14.1
Sg eN 43 18.7

NIE Δ = 110km
Pg eZ 21 43 25.0
Sg eE 43 40.2

KSP Δ = 226km
Pg eZ 21 43 44.7
Sn eN 44 11.5

MAR 8
GIG: φ = 50.069°N, λ = 18.466°E
H = 15:42:44.4, M = 2.2

RAC Δ = 20km
Pg eZ 15 42 48.7
Sg eNE 42 52.1

OJC Δ = 97km
Pg eZ 15 43 00.9
Sg eE 43 13.8

NIE Δ = 151km
Pg eZ 15 43 09.0
Sg eN 43 27.9

KSP Δ = 177km
Sg eN 15 43 33.6

MAR 8
GIG: φ = 50.241°N, λ = 18.924°E
H = 17:13:56.5, M = 2.2

OJC Δ = 63km
Pg eZ 17 14 07.6
Sg eE 14 15.8

NIE Δ = 135km
Pg eZ 17 14 19.6
Sg eE 14 35.8

KSP Δ = 198km
Pg eZ 17 14 29.6
Sg eN 14 53.0

MAR 8
GIG: φ = 50.068°N, λ = 18.459°E
H = 20:14:58.1, M = 2.4

RAC Δ = 19km
Pg iZ 20 15 02.6 D
Sg eNE 15 05.9

OJC Δ = 97km
Pg eZ 20 15 14.9
Sg eN 15 27.1

NIE Δ = 152km
Pg eZ 20 15 23.2
Sg eN 15 41.9

KSP Δ = 176km
Pg eZ 20 15 26.3
Sg eN 15 48.3

MAR 9
φ = 50.05°N, λ = 18.44°E
H = 00:01:04.4, M = 2.1

RAC Δ = 18km
Pg eZ 00 01 08.6
Sg eNE 01 11.6

OJC Δ = 98km
Pg eZ 00 01 21.4
Sg eN 01 33.9

NIE Δ = 152km
Pg eZ 00 01 29.4
Sg eN 01 48.7

MAR 9
φ = 50.25°N, λ = 18.88°E
H = 03:31:52.5, M = 2.2

OJC Δ = 65km
Pg eZ 03 32 04.5
Sg eN 32 12.8

NIE Δ = 138km
Pg eZ 03 32 15.3
Sg eE 32 33.5

KSP Δ = 195km
Pg eZ 03 32 25.7
Sg eN 32 48.6

MAR 9
φ = 50.19°N, λ = 18.78°E
H = 08:42:54.1, M = 2.5

OJC Δ = 73km
Pg eZ 08 43 07.5
Sg eN 43 16.8

NIE Δ = 140km
Pg eZ 08 43 17.3
Sg eE 43 35.3

KSP Δ = 191km
Pg eZ 08 43 26.2
Sg eN 43 49.6

MAR 9
GIG: φ = 50.067°N, λ = 18.424°E
H = 22:09:51.2, M = 2.4

RAC Δ = 17km
Pg iZ 22 09 55.1 C
Sg eNE 09 57.9

OJC Δ = 99km
Pg eZ 22 10 08.2
Sg eN 10 20.8

NIE Δ = 154km
Pg eZ 22 10 16.4
Sg eN 10 36.7

KSP Δ = 174km
Pn eZ 22 10 18.8
Pg eZ 10 20.6
Sg eN 10 40.8

MAR 9
GIG: φ = 50.261°N, λ = 18.862°E
H = 22:39:18.0, M = 2.3

OJC Δ = 67km
Pg eZ 22 39 30.4
Sg eE 39 38.8

NIE Δ = 140km
Pg eZ 22 39 41.0
Sg eE 39 59.2

KSP Δ = 193km
Pg eZ 22 39 51.0
Sg eN 40 13.8

MAR 10
GIG: φ = 50.076°N, λ = 19.127°E
H = 01:59:45.1, M = 2.4

OJC Δ = 50km
Pg eZ 01 59 54.3
Sg eN 02 00 00.6

NIE Δ = 112km
Pg eZ 02 00 03.0
Sg eE 00 18.8

KSP Δ = 218km
Pn eZ 02 00 19.7
Pg eZ 00 21.8
Sg eZ 00 47.0

MAR 10
GIG: φ = 50.064°N, λ = 18.423°E
H = 05:09:35.1, M = 2.4

RAC Δ = 16km
Pg iZ 05 09 38.8 D
Sg eNE 09 41.9

OJC Δ = 100km
Pg eZ 05 09 51.9
Sg eN 10 04.6

NIE Δ = 154km
Pg eZ 05 10 00.2
Sg eN 10 19.3

KSP Δ = 174km
Pg eZ 05 10 03.0
Sg eN 10 25.6

MAR 10
φ = 50.16°N, λ = 19.31°E
H = 10:48:42.9, M = 2.3

OJC Δ = 35km
Pg eZ 10 48 48.6
Sg eN 48 53.4

NIE Δ = 110km
Pg eZ 10 49 01.2
Sg eE 49 16.0

KSP Δ = 227km
Pg eE 10 49 22.3
Sn eN 49 46.7

MAR 10
GIG: φ = 50.234°N, λ = 19.040°E
H = 19:46:47.6, M = 2.1

OJC Δ = 54km
Pg eZ 19 46 57.7
Sg eN 47 05.1

NIE Δ = 129km
Pg eZ 19 47 08.9
Sg eN 47 25.6

KSP Δ = 206km
Pg eE 19 47 22.8
Sg eN 47 46.6

MAR 10

GIG: φ = 50.040°N, λ = 18.468°E
H = 19:57:18.5, M = 2.1

OJC	Δ = 97km		
	Pg eZ	19 57	35.4
	Sg eN	57	47.6
NIE	Δ = 150km		
	Pg eZ	19 57	43.0
	Sg eE	58	02.3
KSP	Δ = 178km		
	Pn eZ	19 57	46.4
	Pg eZ	57	48.6
	Sg eE	58	09.6

MAR 11

GIG: φ = 50.067°N, λ = 18.460°E
H = 12:50:23.0, M = 2.2

RAC	Δ = 19km		
	Pg eZ	12 50	27.6
	Sg eNE	50	30.8
OJC	Δ = 97km		
	Pg eZ	12 50	39.9
	Sg eN	50	52.0
NIE	Δ = 151km		
	Pg eZ	12 50	47.6
	Sg eE	51	06.0
KSP	Δ = 177km		
	Pg eZ	12 50	54.0
	Sg eN	51	13.5

MAR 11

φ = 50.16°N, λ = 19.29°E
H = 15:26:32.3, M = 2.3

OJC	Δ = 38km		
	Pg eZ	15 26	39.5
	Sg eN	26	44.1
NIE	Δ = 110km		
	Pg eZ	15 26	50.5
	Sg eE	27	05.1
KSP	Δ = 225km		
	Pg eZ	15 27	11.4
	Sg eN	27	36.9

MAR 11

GIG: φ = 50.276°N, λ = 18.891°E
H = 22:55:34.0, M = 2.2

OJC	Δ = 65km		
	Pg eZ	22 55	46.2
	Sg eE	55	54.5
NIE	Δ = 140km		
	Pg eZ	22 55	57.8
	Sg eE	56	14.9
KSP	Δ = 194km		
	Pg eZ	22 56	07.8
	Sg eN	56	29.5

MAR 12

GIG: φ = 50.051°N, λ = 18.453°E
H = 01:16:51.4, M = 2.1

RAC	Δ = 19km		
	Pg iZ	01 16	55.6 D
	Sg eNE	16	58.9
OJC	Δ = 98km		
	Pg eZ	01 17	08.2
	Sg eN	17	21.4
NIE	Δ = 151km		
	Pg eZ	01 17	16.8
	Sg eE	17	36.0
KSP	Δ = 177km		
	Pg eE	01 17	20.4
	Sg eN	17	42.0

MAR 13

GIG: φ = 50.259°N, λ = 18.862°E
H = 16:14:51.6, M = 2.6

RAC	Δ = 52km		
	Pg eZ	16 15	01.7
	Sg eNE	15	08.9
OJC	Δ = 67km		
	Pg eZ	16 15	03.9
	Sg eN	15	12.3
NIE	Δ = 141km		
	Pg eZ	16 15	14.8
	Sg eE	15	32.4
KSP	Δ = 193km		
	Pg eZ	16 15	24.4
	Sg eN	15	47.0

MAR 14

GIG: φ = 50.234°N, λ = 19.040°E
H = 22:39:58.1, M = 2.1

OJC Δ = 55km
Pg eZ 22 40 08.2
Sg eN 40 15.4

NIE Δ = 129km
Pg eZ 22 40 19.2
Sg eN 40 35.9

KSP Δ = 205km
Pg eZ 22 40 32.7
Sg eN 40 57.3

MAR 15

GIG: φ = 50.232°N, λ = 18.922°E
H = 00:06:21.2, M = 2.1

OJC Δ = 62km
Pg eZ 00 06 32.7
Sg eZ 06 40.9

NIE Δ = 134km
Pg eZ 00 06 43.6
Sg eE 07 01.1

KSP Δ = 198km
Pg eZ 00 06 54.6
Sg eN 07 18.3

MAR 15

GIG: φ = 50.260°N, λ = 18.863°E
H = 01:11:14.2, M = 2.5

OJC Δ = 67km
Pg eZ 01 11 26.2
Sg eN 11 35.6

NIE Δ = 140km
Pg eZ 01 11 36.8
Sg eE 11 54.9

KSP Δ = 193km
Pg iZ 01 11 47.0
Sg eN 12 09.7

MAR 15

φ = 50.22°N, λ = 18.82°E
H = 05:12:18.6, M = 2.3

RAC Δ = 48km
Pg eZ 05 12 28.2
Sg eNE 12 34.5

OJC Δ = 69km
Pg eZ 05 12 31.0
Sg eE 12 39.1

NIE Δ = 140km
Pg eZ 05 12 41.2
Sg eE 12 59.3

KSP Δ = 192km
Pg eZ 05 12 50.9
Sg eN 13 13.7

MAR 15

GIG: φ = 49.990°N, λ = 18.684°E
H = 21:10:30.8, M = 2.2

RAC Δ = 37km
Pg eZ 21 10 39.9
(Sg) eNE 10 43.9

OJC Δ = 84km
Pg eZ 21 10 45.3
Sg eE 10 55.8

NIE Δ = 133km
Pg eZ 21 10 52.4
Sg eE 11 09.7

MAR 15

GIG: φ = 50.259°N, λ = 18.893°E
H = 21:20:31.0, M = 2.2

OJC Δ = 65km
Pg eZ 21 20 43.0
Sg eE 20 51.1

NIE Δ = 138km
Pg eZ 21 20 53.6
Sg eE 21 11.3

KSP Δ = 195km
Pg eE 21 21 04.3
Sg eN 21 27.4

MAR 16

GIG: φ = 50.171°N, λ = 19.296°E
H = 07:48:27.4, M = 2.3

OJC Δ = 36km
Pg eZ 07 48 34.7
Sg eN 48 39.4

NIE Δ = 111km
Pg eZ 07 48 45.6
Sg eE 49 00.2

KSP Δ = 226km
Pg eE 07 49 05.4
Sn eN 49 29.4

MAR 16

GIG: φ = 49.971°N, λ = 18.640°E
H = 10:48:56.2, M = 2.4

OJC Δ = 87km
Pg eZ 10 49 11.2
Sg eE 49 22.3

NIE Δ = 135km
Pg eZ 10 49 17.7
Sg eE 49 36.2

KSP Δ = 193km
Pg eZ 10 49 30.2
Sg eN 49 51.2

MAR 16

φ = 50.26°N, λ = 18.84°E
H = 19:37:55.4, M = 2.1

OJC Δ = 68km
Pg eZ 19 38 08.2
Sg eE 38 15.9

NIE Δ = 141km
Pg eZ 19 38 19.0
Sg eE 38 38.5

KSP Δ = 192km
Pg eZ 19 38 27.7
Sg eN 38 50.3

MAR 17

GIG: φ = 50.234°N, λ = 19.040°E
H = 00:51:17.0, M = 2.1

OJC Δ = 54km
Pg eZ 00 51 27.0
Sg eN 51 34.0

NIE Δ = 129km
Pg eZ 00 51 38.3
Sg eE 51 54.5

KSP Δ = 206km
Pg eE 00 51 51.6
Sg eE 52 15.1

MAR 17

GIG: φ = 50.262°N, λ = 18.930°E
H = 11:44:06.3, M = 2.4

OJC Δ = 62km
Pg eZ 11 44 17.7
Sg eEN 44 25.9

NIE Δ = 136km
Pg eZ 11 44 28.3
Sg eE 44 45.9

KSP Δ = 198km
Pg eZ 11 44 39.7
Sg eN 45 03.3

MAR 17

GIG: φ = 50.254°N, λ = 18.884°E
H = 13:07:20.7, M = 2.4

OJC Δ = 65km
Pg eZ 13 07 32.8
Sg eN 07 41.2

NIE Δ = 139km
Pg eZ 13 07 43.5
Sg eN 08 01.4

KSP Δ = 195km
Pn eZ 13 07 51.3
Pg eZ 07 53.7
Sn eN 08 14.1
Sg eN 08 16.8

MAR 17

GIG: φ = 50.068°N, λ = 18.464°E
H = 13:29:20.6, M = 2.6

RAC Δ = 19km
Pg iZ 13 29 25.0 D
Sg eNE 29 28.3

OJC Δ = 97km
Pg eZ 13 29 37.3
Sg eE 29 49.9

NIE Δ = 151km
Pg eZ 13 29 45.5
Sg eN 30 05.5

KSP Δ = 176km
Pg eZ 13 29 48.9
Sg eN 30 10.9

MAR 17

φ = 50.26°N, λ = 18.93°E
H = 21:37:19.8, M = 2.1

OJC Δ = 62km
Pg eZ 21 37 31.4
Sg eE 37 39.3

NIE Δ = 136km
Pg eZ 21 37 42.2
Sg eE 37 59.6

KSP Δ = 198km
Pg eZ 21 37 53.1
Sg eN 38 16.3

MAR 17
GIG: φ = 50.171°N, λ = 19.298°E
H = 21:41:49.7, M = 2.5

OJC	Δ = 36km		
	Pg iZ	21 41 56.6	D
	Sg iE	42 01.0	
NIE	Δ = 111km		
	Pg eZ	21 42 07.3	
	Sg eN	42 22.8	
KSP	Δ = 226km		
	Pn eZ	21 42 25.4	
	Pg eZ	42 27.3	
	Sg eE	42 54.6	

MAR 17
GIG: φ = 50.259°N, λ = 18.893°E
H = 22:17:22.7, M = 2.1

OJC	Δ = 64km		
	Pg eZ	22 17 34.7	
	Sg eE	17 43.1	
NIE	Δ = 139km		
	Pg eZ	22 17 45.4	
	Sg eE	18 03.6	
KSP	Δ = 195km		
	Pg eE	22 17 55.8	
	Sg eZ	18 18.1	

MAR 18
GIG: φ = 50.103°N, λ = 19.176°E
H = 03:43:50.6, M = 2.5

OJC	Δ = 47km		
	Pg eZ	03 43 59.4	
	Sg eN	44 05.5	
RAC	Δ = 70km		
	Pg eZ	03 44 03.3	
	Sg eNE	44 12.7	
NIE	Δ = 112km		
	Pg eZ	03 44 08.8	
	Sg eE	44 24.2	
KSP	Δ = 220km		
	Pn eZ	03 44 25.3	
	Pg eZ	44 27.3	
	Sn eN	44 51.5	

MAR 18
GIG: φ = 50.275°N, λ = 18.889°E
H = 07:54:02.3, M = 2.3

OJC	Δ = 65km		
	Pg eZ	07 54 14.4	
	Sg eE	54 22.2	
NIE	Δ = 139km		
	Pg eZ	07 54 25.3	
	Sg eE	54 42.8	
KSP	Δ = 194km		
	Pn eZ	07 54 33.9	
	Pg eZ	54 35.0	
	Sg eN	54 57.8	

MAR 18
GIG: φ = 50.234°N, λ = 19.040°E
H = 16:39:28.9, M = 2.1

OJC	Δ = 54km		
	Pg eZ	16 39 38.8	
	Sg eN	39 46.0	
NIE	Δ = 129km		
	Pg eZ	16 39 50.3	
	Sg eN	40 07.2	
KSP	Δ = 206km		
	Pg eE	16 40 02.7	
	Sg eN	40 27.0	

MAR 19
GIG: φ = 50.171°N, λ = 19.298°E
H = 03:28:02.3, M = 2.4

OJC	Δ = 36km		
	Pg iZ	03 28 08.8	D
	Sg eN	28 13.7	
NIE	Δ = 110km		
	Pg eZ	03 28 19.7	
	Sg eE	28 35.4	
KSP	Δ = 226km		
	Pg eZ	03 28 40.0	
	Sg eN	29 06.4	

MAR 21
GIG: φ = 50.067°N, λ = 18.424°E
H = 04:42:06.6, M = 2.5

RAC	Δ = 17km		
	Pg iZ	04 42 10.4	D
	Sg eNE	42 13.3	

OJC Δ = 99km
Pg eZ 04 42 23.6
Sg eN 42 36.6

NIE Δ = 154km
Pg eZ 04 42 31.5
Sg eE 42 51.6

KSP Δ = 174km
Pg eE 04 42 34.6
Sg eE 42 57.0

MAR 21
GIG: φ = 50.257°N, λ = 18.893°E
H = 07:52:21.4, M = 2.2

OJC Δ = 65km
Pg eZ 07 52 33.4
Sg eE 52 41.7

NIE Δ = 138km
Pg eZ 07 52 45.5
Sg eN 53 03.7

KSP Δ = 195km
Pg eZ 07 52 54.6
Sg eN 53 17.3

MAR 21
GIG: φ = 50.064°N, λ = 18.427°E
H = 13:14:13.1, M = 2.2

RAC Δ = 17km
Pg eZ 13 14 16.9
Sg eNE 14 20.0

OJC Δ = 100km
Pg eZ 13 14 30.4
Sg eN 14 42.9

NIE Δ = 153km
Pg eZ 13 14 38.1
Sg eE 14 58.0

KSP Δ = 175km
Pg eN 13 14 41.6
Sg eE 15 03.0

MAR 21
GIG: φ = 50.253°N, λ = 18.908°E
H = 14:05:47.6, M = 2.8

RAC Δ = 54km
Pg eZ 14 05 58.3
Sg eE 06 05.6

OJC Δ = 64km
Pg eZ 14 05 59.5
Sg eE 06 07.7

NIE Δ = 137km
Pg eZ 14 06 10.0
Sg eE 06 26.4

KSP Δ = 196km
Pg eZ 14 06 21.1
Sg eN 06 44.4

MAR 21
GIG: φ = 50.257°N, λ = 18.893°E
H = 23:32:03.0, M = 2.1

OJC Δ = 65km
Pg eZ 23 32 15.0
Sg eNE 32 23.4

NIE Δ = 138km
Pg eZ 23 32 25.5
Sg eE 32 42.6

KSP Δ = 195km
Pg eZ 23 32 36.2
Sg eN 32 59.2

MAR 22
GIG: φ = 50.260°N, λ = 18.861°E
H = 03:28:20.2, M = 2.2

OJC Δ = 67km
Pg eZ 03 28 32.7
Sg eNE 28 41.4

NIE Δ = 140km
Pg eZ 03 28 43.0
Sg eN 29 01.0

KSP Δ = 193km
Pg eZ 03 28 52.9
Sg eN 29 16.1

MAR 22
GIG: φ = 50.067°N, λ = 18.426°E
H = 06:20:34.8, M = 2.1

RAC Δ = 17km
Pg eZ 06 20 38.6
Sg eNE 20 41.7

OJC Δ = 99km
Pg eZ 06 20 52.1
Sg eN 21 04.4

NIE Δ = 154km
Pg eZ 06 20 59.9
Sg eN 21 18.6

KSP Δ = 174km
Pg eE 06 21 04.7
Sg eE 21 24.8

MAR 22

GIG: φ = 50.067°N, λ = 18.423°E
H = 06:35:21.1, M = 2.1

RAC Δ = 16km
Pg eZ 06 35 24.7
Sg eNE 35 27.6

OJC Δ = 100km
Pg eZ 06 35 38.4
Sg eEN 35 51.8

NIE Δ = 154km
Pg eZ 06 35 46.1
Sg eE 36 05.9

KSP Δ = 174km
Pg eEN 06 35 50.8
Sg eEZ 36 11.0

MAR 22

GIG: φ = 50.171°N, λ = 19.298°E
H = 11:52:14.4, M = 2.3

OJC Δ = 36km
Pg eZ 11 52 21.0
Sg eN 52 25.6

NIE Δ = 111km
Pg eZ 11 52 33.3
Sg eE 52 48.1

KSP Δ = 226km
Pg eZ 11 52 51.7
Sg eE 53 18.2

MAR 22

GIG: φ = 50.238°N, λ = 18.923°E
H = 18:58:21.4, M = 2.1

OJC Δ = 63km
Pg eZ 18 58 32.8
Sg eE 58 41.0

NIE Δ = 135km
Pg eZ 18 58 44.7
Sg eE 59 01.5

KSP Δ = 198km
Pg eZ 18 58 54.6
Sg eN 59 18.0

MAR 22

GIG: φ = 50.072°N, λ = 19.125°E
H = 22:47:49.3, M = 2.4

OJC Δ = 51km
Pg eZ 22 47 58.6
Sg eN 48 05.2

NIE Δ = 112km
Pg eZ 22 48 07.4
Sg eE 48 23.4

KSP Δ = 219km
Pg eZ 22 48 26.1
Sg eN 48 52.0

MAR 23

GIG: φ = 50.244°N, λ = 19.001°E
H = 00:37:40.8, M = 2.2

OJC Δ = 57km
Pg eZ 00 37 51.2
Sg eE 37 58.6

NIE Δ = 132km
Pg eZ 00 38 02.6
Sg eE 38 18.6

KSP Δ = 203km
Pg eZ 00 38 14.9
Sg eN 38 39.5

MAR 23

GIG: φ = 50.258°N, λ = 18.886°E
H = 04:16:50.9, M = 2.0

OJC Δ = 65km
Pg eZ 04 17 02.8
Sg eE 17 11.3

NIE Δ = 138km
Pg eZ 04 17 13.5
Sg eN 17 30.8

KSP Δ = 195km
Pg eZ 04 17 23.5
Sn eE 17 45.4

MAR 23

φ = 50.17°N, λ = 19.30°E
H = 04:33:09.9, M = 2.3

OJC Δ = 36km
Pg eZ 04 33 16.6
Sg eE 33 21.3

NIE Δ = 110km
Pg eZ 04 33 27.3
Sg eE 33 42.6

KSP Δ = 226km
Pn eZ 04 33 46.4
Pg eZ 33 47.6
Sn eN 34 14.0

MAR 23
GIG: φ = 50.067°N, λ = 18.467°E
H = 05:15:16.5, M = 2.4

RAC Δ = 20km
Pg eZ 05 15 21.0
Sg eNE 15 24.4

OJC Δ = 97km
Pg eZ 05 15 33.8
Sg eN 15 45.1

NIE Δ = 151km
Pg eZ 05 15 41.1
Sg eE 16 00.2

MAR 23
GIG: φ = 50.261°N, λ = 18.862°E
H = 06:46:04.1, M = 2.5

OJC Δ = 67km
Pg eZ 06 46 16.4
Sg eN 46 24.9

NIE Δ = 140km
Pg eZ 06 46 27.0
Sg eN 46 44.9

KSP Δ = 193km
Pg eZ 06 46 37.1
Sg eN 46 59.9

MAR 23
GIG: φ = 50.224°N, λ = 18.793°E
H = 08:58:29.3, M = 2.4

OJC Δ = 72km
Pg eZ 08 58 42.4
Sg eE 58 51.4

NIE Δ = 141km
Pg eZ 08 58 52.5
Sg eN 59 09.5

KSP Δ = 190km
Pg eZ 08 59 01.9
Sg eN 59 24.3

MAR 23
GIG: φ = 50.275°N, λ = 18.890°E
H = 16:45:09.3, M = 2.4

OJC Δ = 65km
Pg eZ 16 45 21.1
Sg eE 45 28.9

NIE Δ = 140km
Pg eZ 16 45 33.6
Sg eN 45 49.8

KSP Δ = 194km
Pg eZ 16 45 42.3
Sg eN 46 05.1

MAR 23
φ = 50.32°N, λ = 18.91°E
H = 18:41:26.3, M = 2.2

OJC Δ = 64km
Pg eZ 18 41 37.9
Sg eE 41 46.3

NIE Δ = 142km
Pg eZ 18 41 50.0
Sg eE 42 08.1

KSP Δ = 194km
Pg eZ 18 41 59.3
Sg eN 42 22.3

MAR 23
GIG: φ = 50.172°N, λ = 19.297°E
H = 20:41:30.5, M = 2.3

OJC Δ = 36km
Pg eZ 20 41 37.0
Sg eE 41 41.8

NIE Δ = 111km
Pg eZ 20 41 48.4
Sg eN 42 03.1

KSP Δ = 226km
Pg eE 20 42 08.0
Sg eN 42 34.3

MAR 24
GIG: φ = 50.259°N, λ = 18.887°E
H = 00:39:07.0, M = 2.1

OJC Δ = 66km
Pg eZ 00 39 19.3
Sg eN 39 27.8

NIE Δ = 139km
Pg eZ 00 39 29.9
Sg eE 39 47.6

KSP Δ = 194km
Pg eE 00 39 39.6
Sg eN 40 03.4

MAR 24
φ = 50.26°N, λ = 18.89°E
H = 01:44:30.2, M = 2.1

OJC Δ = 64km
Pg eZ 01 44 42.2
Sg eN 44 50.5

NIE Δ = 139km
Pg eZ 01 44 52.9
Sg eE 45 11.0

KSP Δ = 195km
Pg eE 01 45 03.3
Sg eN 45 26.4

MAR 24

φ = 50.17°N, λ = 19.29°E
H = 03:03:20.3, M = 2.1

OJC Δ = 37km
Pg eZ 03 03 27.2
Sg eN 03 31.9

NIE Δ = 110km
Pg eZ 03 03 38.2
Sg eN 03 53.1

KSP Δ = 226km
Pg eE 03 03 59.4
Sg eN 04 24.4

MAR 24

φ = 50.26°N, λ = 18.86°E
H = 03:11:08.1, M = 2.0

OJC Δ = 67km
Pg eZ 03 11 20.5
Sg eE 11 29.0

NIE Δ = 139km
Pg eZ 03 11 30.8
Sg eN 11 48.4

KSP Δ = 193km
Pg eZ 03 11 40.9
Sg eN 12 03.5

MAR 24

φ = 50.16°N, λ = 18.87°E
H = 05:49:02.9, M = 2.0

OJC Δ = 66km
Pg eZ 05 49 15.4
Sg eE 49 22.9

NIE Δ = 133km
Pg eZ 05 49 26.0
Sg eE 49 43.1

KSP Δ = 198km
Pg eZ 05 49 36.8
Sg eN 49 58.7

MAR 24

GIG: φ = 50.275°N, λ = 18.889°E
H = 11:56:02.1, M = 2.5

OJC Δ = 65km
Pg eZ 11 56 14.0
Sg eN 56 22.3

NIE Δ = 139km
Pg eZ 11 56 24.8
Sg eE 56 42.9

KSP Δ = 194km
Pn eZ 11 56 33.0
Pg eZ 56 35.4
Sg eN 56 58.2

MAR 24

GIG: φ = 50.068°N, λ = 18.458°E
H = 12:50:01.9, M = 2.6

RAC Δ = 19km
Pg iZ 12 50 06.1 D
Sg eNE 50 09.5

KSP Δ = 176km
Pn eZ 12 50 30.2
Pg eZ 50 31.4
Sg eN 50 52.1

MAR 24

GIG: φ = 50.257°N, λ = 18.904°E
H = 12:50:00.7, M = 2.6

OJC Δ = 64km
Pg eZ 12 50 13.0
Sg eN 50 20.8

NIE Δ = 138km
Pg eZ 12 50 23.5
Sg eE 50 40.6

MAR 24

GIG: φ = 50.077°N, λ = 19.127°E
H = 15:10:27.3, M = 2.7

OJC Δ = 51km
Pg eZ 15 10 36.6
Sg eN 10 43.2

RAC Δ = 66km
Pg eZ 15 10 39.3
Sg eNE 10 47.5

NIE Δ = 112km
Pg eZ 15 10 45.4
Sg eE 11 01.5

KSP Δ = 218km
Pn eZ 15 11 02.2
Pg eZ 11 04.3
Sg eE 11 30.5

MAR 24

φ = 50.32°N, λ = 18.92°E
H = 19:57:28.7, M = 2.3

OJC Δ = 64km
Pg eZ 19 57 40.5
Sg eE 57 48.8

NIE Δ = 141km
Pg eZ 19 57 52.5
Sg eE 58 10.3

KSP Δ = 194km
Pg eZ 19 58 01.7
Sg eZ 58 24.8

MAR 24
GIG: **φ = 50.259°N, λ = 18.887°E**
H = 20:21:59.0, M = 2.2

OJC Δ = 65km
Pg eZ 20 22 11.6
Sg eE 22 19.3

NIE Δ = 138km
Pg eZ 20 22 21.9
Sg eE 22 40.1

KSP Δ = 195km
Pg eZ 20 22 32.2
Sg eZ 22 54.3

MAR 24

φ = 50.16°N, λ = 19.31°E
H = 23:30:31.0, M = 2.3

OJC Δ = 35km
Pg iZ 23 30 37.7 D
Sg iN 30 42.3

NIE Δ = 109km
Pg eZ 23 30 48.4
Sg eE 31 03.2

KSP Δ = 227km
Pg eZ 23 31 10.7
Sg eN 31 35.7

MAR 25
GIG: **φ = 50.070°N, λ = 18.466°E**
H = 00:35:35.1, M = 1.9

RAC Δ = 19km
Pg eZ 00 35 39.6
Sg eNE 35 42.6

OJC Δ = 97km
Pg eZ 00 35 51.8
Sg eN 36 04.4

NIE Δ = 151km
Pg eZ 00 35 59.6
Sg eN 36 18.5

MAR 25
GIG: **φ = 50.072°N, λ = 19.127°E**
H = 06:54:18.9, M = 2.3

OJC Δ = 50km
Pg eZ 06 54 28.3
Sg eN 54 34.8

NIE Δ = 113km
Pg eZ 06 54 37.0
Sg eE 54 52.9

KSP Δ = 218km
Pg eZ 06 54 55.4
Sg eN 55 23.1

MAR 25

φ = 50.27°N, λ = 18.86°E
H = 22:35:59.4, M = 2.1

OJC Δ = 67km
Pg eZ 22 36 12.1
Sg eE 36 20.5

NIE Δ = 141km
Pg eZ 22 36 22.5
Sg eE 36 40.7

KSP Δ = 192km
Pg eZ 22 36 32.5
Sg eN 36 55.2

MAR 26

φ = 50.24°N, λ = 18.88°E
H = 00:11:15.2, M = 2.1

OJC Δ = 65km
Pg eZ 00 11 27.4
Sg eN 11 35.4

NIE Δ = 138km
Pg eZ 00 11 37.9
Sg eN 11 55.3

KSP Δ = 195km
Pg eZ 00 11 48.6
Sg eN 12 11.7

MAR 26
GIG: φ = 50.276°N, λ = 18.831°E
H = 05:24:56.6, M = 2.0

OJC Δ = 69km
Pg eZ 05 25 09.9
Sg eN 25 18.3

NIE Δ = 143km
Pg eZ 05 25 19.2
Sg eN 25 37.3

KSP Δ = 190km
Pg eZ 05 25 28.4
Sg eN 25 51.4

MAR 26
GIG: φ = 50.042°N, λ = 18.462°E
H = 09:49:04.1, M = 2.2

RAC Δ = 20km
Pg eZ 09 49 08.3
Sg eNE 49 12.3

OJC Δ = 98km
Pg eZ 09 49 20.7
Sg eN 49 34.2

KSP Δ = 178km
Pg eZ 09 49 33.2
Sg eN 49 54.7

MAR 26
φ = 50.16°N, λ = 19.31°E
H = 11:27:22.4, M = 2.3

OJC Δ = 36km
Pg eZ 11 27 28.9
Sg iN 27 33.6

NIE Δ = 110km
Pg eZ 11 27 39.8
Sg eE 27 54.1

KSP Δ = 227km
Pg eZ 11 28 01.1
Sn eN 28 26.1

MAR 26
GIG: φ = 50.065°N, λ = 18.423°E
H = 23:46:42.3, M = 2.0

RAC Δ = 16km
Pg iZ 23 46 45.9 D
Sg eNE 46 48.8

OJC Δ = 100km
Pg eZ 23 46 59.2
Sg eN 47 12.9

KSP Δ = 174km
Pg eE 23 47 10.0
Sg eE 47 32.5

MAR 27
φ = 50.06°N, λ = 18.43°E
H = 03:08:59.1, M = 1.9

RAC Δ = 17km
Pg iZ 03 09 02.9 D
Sg eNE 09 06.0

OJC Δ = 100km
Pg eZ 03 09 16.1
Sg eN 09 29.3

NIE Δ = 153km
Pg eZ 03 09 24.1
Sg eN 09 44.4

KSP Δ = 175km
Pg eZ 03 09 29.0
Sg eZ 09 49.9

MAR 27
φ = 50.20°N, λ = 18.88°E
H = 10:19:56.9, M = 2.1

OJC Δ = 66km
Pg eZ 10 20 09.2
Sg eE 20 17.5

NIE Δ = 135km
Pg eZ 10 20 20.6
Sg eZ 20 37.8

KSP Δ = 196km
Pg eZ 10 20 30.3
Sg eN 20 53.6

MAR 28
φ = 50.04°N, λ = 18.42°E
H = 01:19:38.0, M = 2.0

RAC Δ = 17km
Pg eZ 01 19 41.7
Sg eNE 19 44.8

OJC Δ = 100km
Pg eZ 01 19 55.0
Sg eN 20 08.6

NIE Δ = 153km
Pg eZ 01 20 02.9
Sg eN 20 23.1

KSP Δ = 175km
Pg eZ 01 20 07.8
Sg eZ 20 28.5

MAR 29

φ = 50.22°N, λ = 18.84°E
H = 15:59:29.6, M = 2.2

OJC Δ = 68km
Pg eZ 15 59 42.4
Sg eE 59 50.4

NIE Δ = 139km
Pg eZ 15 59 54.0
Sg eE 16 00 11.7

KSP Δ = 193km
Pg eZ 16 00 02.6
Sg eN 00 25.1

MAR 29

φ = 50.16°N, λ = 19.03°E
H = 19:14:27.4, M = 2.2

OJC Δ = 56km
Pg eZ 19 14 37.7
Sg eN 14 44.4

NIE Δ = 124km
Pg eZ 19 14 49.0
Sg eE 15 05.1

KSP Δ = 208km
Pg eE 19 15 02.7
Sg eN 15 27.7

MAR 30
GIG: **φ = 50.071°N, λ = 19.127°E**
H = 03:44:21.0, M = 2.3

OJC Δ = 51km
Pg iZ 03 44 30.5 D
Sg eN 44 37.0

NIE Δ = 112km
Pg eZ 03 44 39.2
Sg eE 44 55.0

KSP Δ = 219km
Pg eZ 03 44 57.5
Sg eE 45 23.2

MAR 30
GIG: **φ = 50.076°N, λ = 19.127°E**
H = 15:23:46.3, M = 2.6

OJC Δ = 51km
Pg eZ 15 23 55.9
Sg eN 24 02.4

NIE Δ = 112km
Pg eZ 15 24 04.6
Sg eE 24 20.2

KSP Δ = 218km
Pg eZ 15 24 23.3
Sg eZ 24 48.9

MAR 30
GIG: **φ = 50.046°N, λ = 18.471°E**
H = 16:57:09.3, M = 2.2

RAC Δ = 20km
Pg eZ 16 57 13.5
Sg eNE 57 17.6

OJC Δ = 97km
Pg eZ 16 57 25.7
Sg eN 57 38.7

NIE Δ = 150km
Pg eZ 16 57 33.3
Sg eE 57 53.1

KSP Δ = 178km
Pg eZ 16 57 38.4
Sg eN 58 00.0

MAR 31

φ = 50.24°N, λ = 18.88°E
H = 00:39:49.8, M = 2.1

OJC Δ = 65km
Pg eZ 00 40 02.0
Sg eN 40 10.3

NIE Δ = 138km
Pg eZ 00 40 12.6
Sg eE 40 29.8

KSP Δ = 195km
Pg eE 00 40 22.8
Sg eN 40 45.9

MAR 31
GIG: φ = 50.064°N, λ = 18.423°E
H = 02:07:50.0, M = 2.4

RAC Δ = 17km
Pg iZ 02 07 53.6 D
Sg eNE 07 56.8

OJC Δ = 99km
Pg eZ 02 08 07.2
Sg eNE 08 19.4

NIE Δ = 154km
Pg eZ 02 08 14.9
Sg eN 08 35.1

KSP Δ = 174km
Pg eZ 02 08 18.4
Sg eN 08 39.9

MAR 31
GIG: φ = 50.261°N, λ = 18.860°E
H = 02:28:02.6, M = 2.3

OJC Δ = 67km
Pg eZ 02 28 15.2
Sg eN 28 23.7

NIE Δ = 140km
Pg eZ 02 28 25.5
Sg eEN 28 43.6

KSP Δ = 193km
Pg eZ 02 28 35.7
Sg eN 28 58.3

MAR 31
GIG: φ = 50.275°N, λ = 18.893°E
H = 03:37:36.1, M = 2.4

OJC Δ = 65km
Pg eZ 03 37 48.1
Sg eE 37 55.9

NIE Δ = 139km
Pg eZ 03 37 59.0
Sg eE 38 16.7

KSP Δ = 194km
Pn eZ 03 38 07.2
Pg eZ 38 09.3
Sg eN 38 31.9

MAR 31
φ = 50.25°N, λ = 18.90°E
H = 04:28:53.2, M = 2.1

OJC Δ = 65km
Pg eZ 04 29 05.0
Sg eNE 29 13.0

NIE Δ = 138km
Pg eZ 04 29 16.0
Sg eE 29 33.1

KSP Δ = 196km
Pg eE 04 29 26.2
Sg eN 29 49.8

MAR 31
GIG: φ = 50.257°N, λ = 18.904°E
H = 08:36:59.4, M = 2.4

OJC Δ = 64km
Pg eZ 08 37 10.9
Sg eE 37 19.3

NIE Δ = 138km
Pg eZ 08 37 22.1
Sg eE 37 39.5

KSP Δ = 196km
Pg eZ 08 37 32.4
Sg eN 37 54.6

MAR 31
φ = 50.30°N, λ = 18.90°E
H = 17:02:56.9, M = 2.1

OJC Δ = 64km
Pg eZ 17 03 08.8
Sg eE 03 16.6

NIE Δ = 141km
Pg eZ 17 03 20.0
Sg eE 03 38.0

KSP Δ = 194km
Pg eN 17 03 29.5
Sg eZ 03 52.3

MAR 31
GIG: φ = 50.260°N, λ = 18.864°E
H = 18:18:18.9, M = 2.6

RAC Δ = 51km
Pg eZ 18 18 28.9
Sg eNE 18 36.1

OJC Δ = 67km
Pg eZ 18 18 30.7 D
Sg iE 18 39.2

NIE Δ = 140km
Pg eZ 18 18 41.9
Sg eE 18 59.5

KSP Δ = 193km
Pg eZ 18 18 51.3
Sg eN 19 14.0

APR 1
φ = 49.99°N, λ = 18.45°E
H = 01:26:04.9, M = 2.1

RAC Δ = 21km
Pg iZ 01 26 09.7 C
Sg eNE 26 13.0

OJC Δ = 100km
Pg eZ 01 26 22.2
Sg eE 26 35.0

NIE Δ = 149km
Pg eZ 01 26 29.8
Sg eEN 26 50.2

APR 1
GIG: φ = 50.057°N, λ = 18.450°E
H = 05:24:43.9, M = 2.1

RAC Δ = 19km
Pg eZ 05 24 48.2
Sg eNE 24 51.6

OJC Δ = 98km
Pg eZ 05 25 00.7
Sg eNE 25 13.0

NIE Δ = 152km
Pg eZ 05 25 08.8
Sg eE 25 28.7

KSP Δ = 176km
Pg eZ 05 25 12.9
(Sg) eN 25 35.9

APR 1
φ = 50.16°N, λ = 18.78°E
H = 07:25:19.8, M = 2.3

OJC Δ = 74km
Pg eZ 07 25 33.4
Sg eN 25 42.7

NIE Δ = 137km
Pg eZ 07 25 44.0
Sg eE 26 01.5

KSP Δ = 192km
Pg eZ 07 25 53.1
Sg eN 26 14.3

APR 1
φ = 50.27°N, λ = 18.87°E
H = 08:45:26.1, M = 2.1

OJC Δ = 66km
Pg eZ 08 45 38.4
Sg eE 45 46.9

NIE Δ = 141km
Pg eZ 08 45 50.2
Sg eE 46 08.5

KSP Δ = 193km
Pg eZ 08 45 58.9
Sg eN 46 21.9

APR 1
GIG: φ = 50.261°N, λ = 18.889°E
H = 13:27:29.3, M = 2.3

OJC Δ = 65km
Pg eZ 13 27 41.4
Sg eE 27 49.7

NIE Δ = 138km
Pg eZ 13 27 52.2
Sg eN 28 09.3

APR 1
GIG: φ = 50.168°N, λ = 19.302°E
H = 19:58:54.3, M = 2.3

OJC Δ = 36km
Pg eZ 19 59 00.9
Sg eN 59 05.4

NIE Δ = 111km
Pg eZ 19 59 13.2
Sg eN 59 28.2

KSP Δ = 226km
Pg eZ 19 59 32.3
Sg eN 59 58.7

APR 1
GIG: φ = 50.040°N, λ = 19.098°E
H = 22:25:05.0, M = 2.5

OJC Δ = 54km
Pg eZ 22 25 14.9
Sg eN 25 21.9

NIE Δ = 111km
Pg eZ 22 25 23.0
Sg eE 25 39.2

KSP Δ = 218km
Pn eZ 22 25 38.9
Pg eE 25 43.2
Sg eN 26 07.3

APR 1
GIG: φ = 50.261°N, λ = 18.860°E
H = 23:55:43.3, M = 2.1

OJC Δ = 67km
Pg eZ 23 55 56.2
Sg eE 56 04.0

NIE Δ = 140km
Pg eZ 23 56 05.9
Sg eE 56 24.2

KSP Δ = 193km
Pg eZ 23 56 16.0
Sg eE 56 39.1

APR 2
GIG: φ = 50.235°N, λ = 19.040°E
H = 00:07:45.6, M = 2.0

OJC Δ = 54km
Pg eZ 00 07 55.8
Sg eN 08 03.1

NIE Δ = 129km
Pg eZ 00 08 07.0
Sg eE 08 22.9

KSP Δ = 206km
Pg eZ 00 08 21.2
Sg eZ 08 43.8

APR 2
GIG: φ = 50.106°N, λ = 19.173°E
H = 06:06:33.2, M = 2.2

OJC Δ = 46km
Pg eZ 06 06 41.8
Sg eN 06 47.8

NIE Δ = 111km
Pg eZ 06 06 51.3
Sg eN 07 05.8

KSP Δ = 221km
Pg eZ 06 07 11.7
Sg eE 07 35.5

APR 3
GIG: φ = 50.067°N, λ = 18.425°E
H = 03:05:09.8, M = 2.1

RAC Δ = 17km
Pg iZ 03 05 13.5 D
Sg eNE 05 16.6

OJC Δ = 100km
Pg eZ 03 05 27.5
Sg eN 05 39.5

NIE Δ = 154km
Pg eZ 03 05 34.3
Sg eE 05 53.5

KSP Δ = 174km
Pg eN 03 05 38.8
Sg eN 05 59.1

APR 4
GIG: φ = 50.065°N, λ = 18.424°E
H = 02:21:10.6, M = 2.2

RAC Δ = 16km
Pg iZ 02 21 14.2 D
Sg eNE 21 17.3

OJC Δ = 100km
Pg eZ 02 21 27.5
Sg eE 21 41.0

NIE Δ = 154km
Pg eZ 02 21 35.3
Sg eN 21 54.9

KSP Δ = 174km
Pg eZ 02 21 38.4
Sg eN 22 00.1

APR 4
GIG: φ = 50.072°N, λ = 19.127°E
H = 09:49:57.0, M = 2.2

OJC Δ = 51km
Pg eZ 09 50 06.2
Sg eN 50 12.9

NIE Δ = 112km
Pg eZ 09 50 14.9
(Sg) eE 50 30.8

KSP Δ = 219km
Pg eE 09 50 34.1
Sg eN 50 59.0

APR 4

φ = 50.26°N, λ = 19.05°E
H = 14:02:51.4, M = 2.2

OJC	Δ = 54km		
	Pg eZ	14 03 01.2	
	Sg eN	03 08.1	
NIE	Δ = 130km		
	Pg eZ	14 03 13.5	
	Sg eN	03 31.0	
KSP	Δ = 206km		
	Pg eE	14 03 26.2	
	Sg eN	03 51.5	

APR 4
GIG: **φ = 50.171°N, λ = 19.298°E**
H = 16:25:13.5, M = 2.3

OJC	Δ = 36km		
	Pg eZ	16 25 20.3	
	Sg eN	25 25.0	
NIE	Δ = 111km		
	Pg eZ	16 25 31.1	
	Sg eN	25 46.4	
KSP	Δ = 226km		
	Pg eZ	16 25 51.8	
	Sg eN	26 18.4	

APR 4

φ = 50.33°N, λ = 18.88°E
H = 17:38:21.1, M = 2.0

OJC	Δ = 66km		
	Pg eZ	17 38 33.7	
	Sg eE	38 41.1	
NIE	Δ = 144km		
	Pg eZ	17 38 45.1	
	Sg eN	39 03.0	
KSP	Δ = 192km		
	Pg eZ	17 38 53.7	
	Sg eN	39 16.5	

APR 4
GIG: **φ = 50.103°N, λ = 19.176°E**
H = 20:35:08.0, M = 2.4

OJC	Δ = 47km		
	Pg eZ	20 35 16.6	
	Sg eN	35 22.8	
NIE	Δ = 112km		
	Pg eZ	20 35 26.1	
	Sg eE	35 41.5	
KSP	Δ = 220km		
	Pg eE	20 35 44.7	
	Sg eZ	36 11.5	

APR 5
GIG: **φ = 50.257°N, λ = 18.893°E**
H = 04:44:22.1, M = 2.8

RAC	Δ = 53km		
	Pg eZ	04 44 32.2	
	Sg eNE	44 39.4	
OJC	Δ = 64km		
	Pg iZ	04 44 33.8	D
	Sg iNE	44 42.2	
NIE	Δ = 138km		
	Pg eZ	04 44 44.0	
	Sg eE	45 01.2	
KSP	Δ = 196km		
	Pn eZ	04 44 53.4	
	Pg eZ	44 55.2	
	Sg eN	45 18.0	

APR 5

φ = 50.19°N, λ = 18.81°E
H = 05:06:32.8, M = 2.6

OJC	Δ = 70km		
	Pg eZ	05 06 45.5	
	Sg eN	06 54.7	
NIE	Δ = 138km		
	Pg eZ	05 06 55.3	
	Sg eN	07 13.6	
KSP	Δ = 192km		
	Pg eZ	05 07 05.5	
	Sg eN	07 28.1	

APR 5
GIG: **φ = 50.066°N, λ = 18.459°E**
H = 05:18:47.4, M = 2.5

RAC	Δ = 19km		
	Pg iZ	05 18 51.8	D
	Sg eNE	18 55.2	
OJC	Δ = 97km		
	Pg eZ	05 19 04.1	
	Sg eEN	19 16.5	
NIE	Δ = 151km		
	Pg eZ	05 19 11.9	
	Sg eN	19 30.7	

KSP Δ = 176km
Pn eE 05 19 15.3
Pg eZ 19 16.2
Sg eN 19 37.9

APR 5
GIG: φ = 50.076°N, λ = 19.125°E
H = 23:20:09.0, M = 2.3

OJC Δ = 50km
Pg eZ 23 20 18.3
Sg eN 20 24.8

NIE Δ = 112km
Pg eZ 23 20 26.9
Sg eE 20 42.6

KSP Δ = 218km
Pg eZ 23 20 45.7
Sg eZ 21 12.2

APR 6
GIG: φ = 50.259°N, λ = 18.895°E
H = 11:56:49.6, M = 2.5

OJC Δ = 65km
Pg eZ 11 57 02.1
Sg eN 57 10.1

NIE Δ = 138km
Pg eZ 11 57 11.5
Sg eN 57 28.8

KSP Δ = 195km
Pg eZ 11 57 22.8
Sg eN 57 46.3

APR 6
GIG: φ = 50.259°N, λ = 18.862°E
H = 14:02:56.5, M = 2.3

OJC Δ = 67km
Pg eZ 14 03 09.1
Sg eE 03 17.4

NIE Δ = 140km
Pg eZ 14 03 20.1
Sg eN 03 37.0

KSP Δ = 193km
Pg eE 14 03 29.1
Sg eN 03 52.2

APR 6
GIG: φ = 50.068°N, λ = 18.425°E
H = 17:45:45.3, M = 3.1

RAC Δ = 17km
Pg iZ 17 45 49.7 C
Sg eNE 45 52.6

OJC Δ = 99km
Pg eZ 17 46 02.7
Sg eN 46 15.3

NIE Δ = 153km
Pg eZ 17 46 09.8
Sg eN 46 30.3

KSP Δ = 175km
Pn eZ 17 46 13.8
Pg eZ 46 15.3
Sg eN 46 35.0

KWP Δ = 311km
Pg eZ 17 46 38.1
Sg eNE 47 19.5

APR 8
GIG: φ = 50.066°N, λ = 18.422°E
H = 04:27:18.6, M = 2.3

RAC Δ = 16km
Pg iZ 04 27 22.4 D
Sg eNE 27 25.3

OJC Δ = 100km
Pg eZ 04 27 36.0
Sg eN 27 48.0

NIE Δ = 154km
Pg eZ 04 27 43.7
Sg eE 28 03.6

APR 8
GIG: φ = 50.067°N, λ = 18.467°E
H = 05:01:57.0, M = 2.6

RAC Δ = 20km
Pg iZ 05 02 01.5 D
Sg eNE 02 04.6

OJC Δ = 97km
Pg eZ 05 02 13.7
Sg eE 02 26.6

NIE Δ = 151km
Pg eZ 05 02 21.4
Sg eN 02 41.6

KSP Δ = 177km
Pn eZ 05 02 25.5
Pg eZ 02 26.4
Sg eN 02 47.5

APR 9
GIG: φ = 50.261°N, λ = 18.860°E
H = 09:30:00.9, M = 2.3

OJC Δ = 67km
Pg eZ 09 30 12.8
Sg eN 30 20.8

NIE Δ = 141km
Pg eZ 09 30 24.4
Sg eE 30 41.5

KSP Δ = 193km
Pg eZ 09 30 33.3
Sg eN 30 56.2

APR 10
GIG: φ = 50.245°N, λ = 18.917°E
H = 22:42:43.2, M = 2.1

OJC Δ = 63km
Pg eZ 22 42 54.7
Sg eN 43 02.7

NIE Δ = 136km
Pg eZ 22 43 05.5
Sg eE 43 22.5

KSP Δ = 198km
Pg eE 22 43 16.5
Sg eN 43 39.8

APR 11
GIG: φ = 50.065°N, λ = 18.423°E
H = 16:00:18.1, M = 2.2

RAC Δ = 16km
Pg eZ 16 00 21.5
Sg eNE 00 24.6

OJC Δ = 100km
Pg eZ 16 00 36.0
Sg eE 00 49.4

NIE Δ = 154km
Pg eZ 16 00 42.8
Sg eN 01 02.4

APR 11
GIG: φ = 50.259°N, λ = 18.860°E
H = 16:50:34.3, M = 2.4

OJC Δ = 67km
Pg eZ 16 50 46.6
Sg eE 50 55.2

NIE Δ = 140km
Pg eZ 16 50 57.7
Sg eN 51 14.8

KSP Δ = 193km
Pg eZ 16 51 07.2
Sg eN 51 29.9

APR 12
φ = 50.20°N, λ = 18.79°E
H = 02:05:19.9, M = 2.1

OJC Δ = 72km
Pg eZ 02 05 33.1
Sg eE 05 41.1

NIE Δ = 140km
Pg eZ 02 05 42.9
Sg eE 06 01.2

KSP Δ = 191km
Pg eZ 02 05 52.8
Sg eN 06 14.6

APR 12
GIG: φ = 50.171°N, λ = 19.298°E
H = 04:07:57.2, M = 2.5

OJC Δ = 36km
Pg eZ 04 08 03.8
Sg eN 08 08.5

NIE Δ = 110km
Pg eZ 04 08 14.6
Sg eNE 08 29.7

KSP Δ = 226km
Pg eZ 04 08 36.6
Sg eN 09 01.5

APR 12
φ = 50.19°N, λ = 18.81°E
H = 18:13:27.8, M = 2.0

OJC Δ = 71km
Pg eZ 18 13 41.5
(Sg) eE 13 49.0

NIE Δ = 138km
Pg eZ 18 13 50.9
Sg eN 14 07.0

KSP Δ = 193km
Pg eZ 18 14 00.8
Sg eN 14 23.8

APR 12
GIG: φ = 50.103°N, λ = 19.175°E
H = 22:31:25.9, M = 2.5

OJC Δ = 46km
Pg eZ 22 31 34.4
Sg eN 31 40.5

RAC Δ = 70km
Pg eZ 22 31 39.0
Sg eNE 31 48.4

NIE Δ = 112km
Pg eZ 22 31 43.8
Sg eE 31 59.2

KSP Δ = 220km
Pg eZ 22 32 01.3
Sn eN 32 26.8

APR 12
GIG: φ = 50.078°N, λ = 19.126°E
H = 22:36:48.0, M = 2.6

OJC Δ = 50km
Pg eZ 22 36 57.3
Sg eN 37 03.8

RAC Δ = 67km
Pg eZ 22 37 00.6
Sg eNE 37 09.7

NIE Δ = 113km
Pg eZ 22 37 05.9
Sg eN 37 22.2

KSP Δ = 218km
Pg eE 22 37 24.7
Sg eE 37 50.8

KWP Δ =261km
Pn eZ 22 37 31.0
Pg eZ 37 41.3
Sn eNE 38 02.8
Sg eNE 38 14.2

APR 12
GIG: φ = 50.259°N, λ = 18.864°E
H = 23:45:16.3, M = 2.3

OJC Δ = 67km
Pg eZ 23 45 28.5
Sg eN 45 37.7

NIE Δ = 140km
Pg eZ 23 45 38.8
Sg eE 45 56.8

KSP Δ = 193km
Pg eZ 23 45 48.6
Sg eN 46 12.3

APR 13
GIG: φ = 50.067°N, λ = 18.424°E
H = 02:10:22.5, M = 2.2

RAC Δ = 17km
Pg iZ 02 10 26.3 D
Sg eNE 10 29.3

OJC Δ = 100km
Pg eZ 02 10 39.3
Sg eN 10 52.1

NIE Δ = 154km
Pg eZ 02 10 47.3
Sg eE 11 07.3

KSP Δ = 174km
Pg eZ 02 10 52.3
Sg eE 11 12.5

APR 13
GIG: φ = 50.260°N, λ = 18.861°E
H = 14:32:58.1, M = 2.5

OJC Δ = 67km
Pg eZ 14 33 10.5
Sg eN 33 18.9

NIE Δ = 140km
Pg eZ 14 33 21.7
Sg eE 33 38.9

KSP Δ = 193km
Pg eZ 14 33 31.2
Sg eN 33 53.9

APR 13
GIG: φ = 50.067°N, λ = 18.458°E
H = 20:14:20.9, M = 2.4

RAC Δ = 19km
Pg iZ 20 14 25.1 D
Sg eNE 14 28.4

OJC Δ = 97km
Pg eZ 20 14 37.4
Sg eE 14 50.8

NIE Δ = 152km
Pg eZ 20 14 45.5
Sg eE 15 05.3

KSP Δ = 176km
Pg eZ 20 14 48.9
Sg eN 15 10.9

APR 13

φ = 50.22°N, λ = 18.86°E
H = 21:34:58.4, M = 2.3

OJC Δ = 67km
Pg eZ 21 35 10.8
Sg eE 35 19.0

NIE Δ = 137km
Pg eZ 21 35 21.2
Sg eE 35 39.3

KSP Δ = 195km
Pg eZ 21 35 31.1
Sg eN 35 54.4

APR 13
GIG: **φ = 50.207°N, λ = 19.116°E**
H = 22:55:23.9, M = 2.5

OJC Δ = 49km
Pg eZ 22 55 33.1
Sg eN 55 39.4

NIE Δ = 122km
Pg eZ 22 55 43.5
Sg eE 56 00.9

KSP Δ = 212km
Pg eZ 22 55 59.3
Sg eN 56 24.3

APR 14

φ = 50.28°N, λ = 19.08°E
H = 14:47:08.0, M = 2.4

OJC Δ = 52km
Pg eZ 14 47 17.6
Sg eN 47 24.4

NIE Δ = 131km
Pg eZ 14 47 30.0
Sg eE 47 46.0

KSP Δ = 207km
Pg eZ 14 47 42.3
Sg eN 48 07.8

APR 14
GIG: **φ = 50.064°N, λ = 18.424°E**
H = 16:00:40.9, M = 2.2

RAC Δ = 16km
Pg iZ 16 00 44.7 D
Sg eNE 00 47.5

OJC Δ = 100km
Pg eZ 16 00 57.8
Sg eN 01 10.5

NIE Δ = 154km
Pg eZ 16 01 06.7
Sg eN 01 26.8

KSP Δ = 174km
Pg eZ 16 01 08.5
Sg eZ 01 31.0

APR 14
GIG: **φ = 50.259°N, λ = 18.860°E**
H = 22:52:47.4, M = 2.3

RAC Δ = 51km
Pg eZ 22 52 57.0
Sg eNE 53 03.1

OJC Δ = 67km
Pg eZ 22 52 59.8
Sg eE 53 08.2

NIE Δ = 140km
Pg eZ 22 53 11.0
Sg eE 53 29.0

KSP Δ = 193km
Pg eZ 22 53 19.9
Sg Z 53 44.1

APR 15
GIG: **φ = 50.164°N, λ = 19.309°E**
H = 01:59:23.1, M = 2.3

OJC Δ = 35km
Pg eZ 01 59 29.6
Sg eNE 59 34.5

NIE Δ = 111km
Pg eZ 01 59 41.5

KSP Δ = 226km
Pg eZ 02 00 00.6
Sg eN 00 27.2

APR 16

GIG: φ = 50.067°N, λ = 18.458°E
H = 04:39:04.7, M = 2.4

RAC Δ = 19km
Pg eZ 04 39 08.8
Sg eNE 39 12.3

OJC Δ = 97km
Pg eZ 04 39 21.3
Sg eE 39 34.7

NIE Δ = 152km
Pg eZ 04 39 30.0
Sg eE 39 49.0

KSP Δ = 176km
Pg eZ 04 39 32.9
Sg eN 39 54.8

APR 16

GIG: φ = 50.261°N, λ = 18.884°E
H = 04:42:16.3, M = 2.1

OJC Δ = 65km
Pg eZ 04 42 28.1
Sg eE 42 36.6

NIE Δ = 139km
Pg eZ 04 42 40.0
Sg eE 42 58.5

KSP Δ = 194km
Pg eZ 04 42 48.4
Sg eN 43 12.8

APR 17

GIG: φ = 50.260°N, λ = 18.913°E
H = 05:03:54.8, M = 2.6

RAC Δ = 55km
Pg eZ 05 04 04.9
Sg eNE 04 12.4

OJC Δ = 63km
Pg eZ 05 04 06.0
Sg eE 04 14.3

NIE Δ = 138km
Pg eZ 05 04 17.8
Sg eE 04 34.3

KSP Δ = 196km
Pn eZ 05 04 25.6
Pg iZ 04 27.6
Sg eE 04 50.3

KWP Δ = 280km
Pn eZ 05 04 39.5
Pg eZ 04 46.2
Sg eNE 05 20.8

APR 18

GIG: φ = 50.240°N, λ = 18.918°E
H = 00:06:16.6, M = 2.1

RAC Δ = 54km
Pg eZ 00 06 26.6
Sg eN 06 33.8

OJC Δ = 63km
Pg eZ 00 06 27.7
Sg eE 06 35.8

KSP Δ = 198km
Pg eE 00 06 49.2
Sg eN 07 13.0

APR 18

GIG: φ = 50.066°N, λ = 18.422°E
H = 01:29:00.0, M = 2.1

RAC Δ = 16km
Pg eZ 01 29 03.8
Sg iN 29 06.9

OJC Δ = 100km
Pg eZ 01 29 17.0
Sg eN 29 29.7

NIE Δ = 154km
Pg eZ 01 29 25.9
Sg eNE 29 46.0

KSP Δ = 174km
Pg eE 01 29 28.0
Sg eZ 29 49.9

APR 19

GIG: φ = 50.068°N, λ = 18.424°E
H = 05:48:06.6, M = 2.3

RAC Δ = 17km
Pg eZ 05 48 10.0
Sg eNE 48 13.6

OJC Δ = 100km
Pg eZ 05 48 23.5
Sg eN 48 36.0

NIE Δ = 154km
Pg eZ 05 48 32.5
Sg eE 48 52.0

KSP Δ = 174km
Pg eN 05 48 36.1
Sg eE 48 56.7

APR 19
GIG: φ = 50.260°N, λ = 18.860°E
H = 17:04:10.6, M = 2.5

OJC Δ = 67km
Pg eZ 17 04 22.2
Sg eE 04 30.9

NIE Δ = 140km
Pg eZ 17 04 34.3
Sg eE 04 51.5

KSP Δ = 193km
Pg eZ 17 04 42.1
Sg eN 05 05.5

APR 19
GIG: φ = 50.045°N, λ = 18.469°E
H = 19:35:50.5, M = 2.6

RAC Δ = 20km
Pg eZ 19 35 55.0
Sg eNE 35 58.6

OJC Δ = 97km
Pg eZ 19 36 07.1
Sg eN 36 19.2

NIE Δ = 150km
Pg eZ 19 36 15.1
Sg eN 36 34.2

KSP Δ = 178km
Pn eZ 19 36 19.0
Pg eZ 36 21.4
Sg eN 36 40.7

APR 19
GIG: φ = 50.043°N, λ = 18.466°E
H = 21:56:55.8, M = 2.3

RAC Δ = 20km
Pg iZ 21 57 00.4 C
Sg eNE 57 03.5

OJC Δ = 97km
Pg eZ 21 57 12.6
Sg eE 57 24.9

NIE Δ = 150km
Pg eZ 21 57 21.5
Sg eE 57 40.5

KSP Δ = 178km
Pg eZ 21 57 25.0
Sg eE 57 47.3

APR 20
φ = 50.06°N, λ = 18.47°E
H = 02:23:30.6, M = 2.0

RAC Δ = 20km
Pg eZ 02 23 35.1
Sg eNE 23 38.2

OJC Δ = 97km
Pg eZ 02 23 47.2
Sg eE 23 59.9

NIE Δ = 150km
Pg eZ 02 23 56.1
Sg eE 24 15.5

KSP Δ = 177km
Pg eE 02 24 01.7
Sg eE 24 21.6

APR 20
GIG: φ = 50.238°N, λ = 18.999°E
H = 11:15:51.0, M = 2.2

OJC Δ = 57km
Pg eZ 11 16 01.6
Sg eN 16 09.2

NIE Δ = 131km
Pg eZ 11 16 14.0
Sg eE 16 31.0

KSP Δ = 203km
Pg eZ 11 16 24.8
Sg eN 16 49.2

APR 20
GIG: φ = 50.234°N, λ = 19.072°E
H = 19:03:05.6, M = 2.2

OJC Δ = 52km
Pg eZ 19 03 15.1
Sg eN 03 21.9

NIE Δ = 128km
Pg eZ 19 03 27.8
Sg eE 03 43.5

KSP Δ = 208km
Pg eZ 19 03 40.1
Sg eN 04 04.8

APR 21

φ = 50.25°N, λ = 18.91°E
H = 02:28:45.4, M = 2.3

OJC Δ = 64km
Pg eZ 02 28 57.2
Sg eN 29 05.2

NIE Δ = 137km
Pg eZ 02 29 09.0
Sg eE 29 26.5

KSP Δ = 196km
Pg eZ 02 29 18.3
Sg eN 29 41.2

APR 21
GIG: **φ = 50.066°N, λ = 18.468°E**
H = 14:20:55.7, M = 2.3

RAC Δ = 20km
Pg eZ 14 21 00.5
Sg eNE 21 03.5

OJC Δ = 96km
Pg eZ 14 21 12.2
Sg eE 21 23.8

NIE Δ = 151km
Pg eZ 14 21 21.2
Sg eE 21 40.0

KSP Δ = 177km
Pg eN 14 21 24.6
Sg eN 21 45.9

APR 21
GIG: **φ = 49.961°N, λ = 18.561°E**
H = 15:36:50.7, M = 2.1

RAC Δ = 30km
Pg eZ 15 36 57.4
Sg eNE 37 01.7

OJC Δ = 93km
Pg eZ 15 37 06.6
Sg eN 37 18.4

NIE Δ = 140km
Pg eZ 15 37 15.0
Sg eN 37 32.9

APR 22

φ = 50.24°N, λ = 18.88°E
H = 05:36:11.1, M = 2.5

RAC Δ = 51km
Pg eZ 05 36 20.6
Sg eNE 36 27.6

OJC Δ = 66km
Pg eZ 05 36 23.2
Sg eN 36 31.8

NIE Δ = 137km
Pg eZ 05 36 33.9
Sg eN 36 52.1

KSP Δ = 195km
Pg eZ 05 36 43.0
Sg eN 37 05.7

APR 22
GIG: **φ = 50.068°N, λ = 18.423°E**
H = 07:34:43.9, M = 2.3

RAC Δ = 16km
Pg eZ 07 34 47.6
Sg eNE 34 50.8

OJC Δ = 100km
Pg eZ 07 35 00.8
Sg eE 35 14.5

NIE Δ = 154km
Pg eZ 07 35 09.6
Sg eE 35 29.6

KSP Δ = 174km
Pg eZ 07 35 11.7
Sg eN 35 33.1

APR 22
GIG: **φ = 50.078°N, λ = 19.127°E**
H = 11:03:23.2, M = 2.5

OJC Δ = 50km
Pg eZ 11 03 32.4
Sg eN 03 38.9

KSP Δ = 218km
Pg eZ 11 03 59.5
Sn eN 04 24.0
Sg eN 04 26.2

APR 22
GIG: **φ = 50.239°N, λ = 18.981°E**
H = 21:46:20.7, M = 2.3

OJC Δ = 58km
Pg eZ 21 46 31.4
Sg eE 46 38.9

RAC Δ = 59km
Pg eZ 21 46 31.7
Sg eNE 46 39.5

NIE Δ = 133km
Pg eZ 21 46 43.5
Sg eNE 47 00.0

KSP Δ = 202km
Pg eZ 21 46 54.4
Sg eE 47 18.7

APR 22

φ = 50.29°N, λ = 18.68°E
H = 23:15:57.2, M = 2.2

RAC Δ = 42km
Pg eZ 23 16 05.1
Sg eNE 16 10.4

OJC Δ = 80km
Pg eZ 23 16 12.0
Sg eE 16 21.6

KSP Δ = 179km
Pg eE 23 16 26.7
Sg eN 16 49.7

APR 23
GIG: **φ = 50.068°N, λ = 18.458°E**
H = 03:04:57.7, M = 2.4

RAC Δ = 19km
Pg iZ 03 05 02.0 C
Sg eNE 05 05.3

OJC Δ = 97km
Pg eZ 03 05 14.4
Sg eN 05 26.1

NIE Δ = 152km
Pg eZ 03 05 23.3
Sg eE 05 41.8

KSP Δ = 176km
Pn eZ 03 05 26.0
Pg eZ 05 26.8
Sg eE 05 48.2

APR 23
GIG: **φ = 50.260°N, λ = 18.863°E**
H = 09:27:43.8, M = 2.6

OJC Δ = 67km
Pg eZ 09 27 56.0
Sg eN 28 04.5

NIE Δ = 140km
Pg eZ 09 28 07.9
Sg eE 28 25.1

KSP Δ = 193km
Pg eZ 09 28 16.6
Sg eN 28 38.9

APR 26
GIG: **φ = 50.068°N, λ = 18.423°E**
H = 01:58:49.0, M = 2.5

RAC Δ = 16km
Pg iZ 01 58 52.8 D
Sg eNE 58 55.7

OJC Δ = 100km
Pg eZ 01 59 05.9
Sg eN 59 18.6

NIE Δ = 154km
Pg eZ 01 59 15.9
Sg eE 59 34.6

KSP Δ = 174km
Pg eZ 01 59 16.8
Sg eN 59 38.3

APR 26
GIG: **φ = 50.046°N, λ = 18.470°E**
H = 12:19:01.9, M = 2.5

RAC Δ = 20km
Pg eZ 12 19 06.6
Sg eNE 19 09.8

OJC Δ = 97km
Pg eZ 12 19 18.8
Sg eE 19 30.5

NIE Δ = 150km
Pg eZ 12 19 27.0
Sg iE 19 47.5

KSP Δ = 178km
Pg eZ 12 19 30.9

APR 26
GIG: **φ = 50.104°N, λ = 19.172°E**
H = 12:40:50.9, M = 2.4

OJC Δ = 46km
Pg eZ 12 40 59.2
Sg eN 41 05.4

NIE Δ = 112km
Pg eZ 12 41 10.5
Sg eE 41 24.5

KSP Δ = 220km
Pg eZ 12 41 27.3
Sg eN 41 52.4

APR 26

φ = 50.29°N, λ = 18.97°E
H = 17:03:46.4, M = 2.1

OJC	Δ = 60km		
	Pg eZ	17	03 57.1
	Sg eE		04 05.2
NIE	Δ = 137km		
	Pg eZ	17	04 10.0
	Sg eN		04 26.5
KSP	Δ = 199km		
	Pg eZ	17	04 18.9
	Sg eN		04 42.6

APR 27

φ = 50.24°N, λ = 18.83°E
H = 04:12:15.9, M = 2.5

RAC	Δ = 50km		
	Pg eZ	04	12 24.8
	Sg eNE		12 30.9
OJC	Δ = 69km		
	Pg eZ	04	12 28.7
	Sg eE		12 37.6
NIE	Δ = 141km		
	Pg eZ	04	12 39.9
	Sg eE		12 56.9
KSP	Δ = 192km		
	Pg eEZ	04	12 48.0
	Sg eZ		13 10.9

APR 27

GIG: φ = 50.203°N, λ = 19.133°E
H = 05:04:19.0, M = 2.3

OJC	Δ = 47km		
	Pg eZ	05	04 27.7
	Sg eN		04 34.1
NIE	Δ = 122km		
	Pg eZ	05	04 40.3
	(Sg) eN		04 56.8
KSP	Δ = 213km		
	Pn eE	05	04 52.5
	Pg eZ		04 55.6
	Sn eN		05 18.2

APR 27

GIG: φ = 50.042°N, λ = 18.467°E
H = 06:06:52.1, M = 2.3

RAC	Δ = 20km		
	Pg eZ	06	06 56.7
	Sg eNE		06 59.7
NIE	Δ = 150km		
	Pg eZ	06	07 16.9
	Sg eE		07 37.0
KSP	Δ = 178km		
	Pg eZ	06	07 20.8
	Sg eE		07 42.6

APR 27

GIG: φ = 50.232°N, λ = 19.071°E
H = 10:20:55.3, M = 2.4

OJC	Δ = 52km		
	Pg eZ	10	21 05.2
	Sg eN		21 11.9
NIE	Δ = 127km		
	Pg eZ	10	21 17.2
	Sg eE		21 33.5
KSP	Δ = 208km		
	Pg eE	10	21 29.8
	Sg eN		21 55.3

APR 27

GIG: φ = 50.076°N, λ = 19.127°E
H = 14:51:05.7, M = 2.2

OJC	Δ = 50km		
	Pg eZ	14	51 14.9
	Sg eN		51 21.2
NIE	Δ = 113km		
	Pg eZ	14	51 24.1
	(Sg) eN		51 40.5
KSP	Δ = 218km		
	Pg eZ	14	51 42.6
	Sg eN		52 08.9

APR 27

GIG: φ = 50.072°N, λ = 19.127°E
H = 22:11:11.4, M = 2.2

OJC	Δ = 50km		
	Pg eZ	22	11 20.4
	Sg iN		11 27.1

NIE Δ = 112km
Pg eZ 22 11 30.0
(Sg) eE 11 46.1

KSP Δ = 219km
Pg eZ 22 11 48.0
Sg eE 12 14.0

APR 28
GIG: φ = 50.259°N, λ = 18.860°E
H = 02:17:37.6, M = 2.4

OJC Δ = 67km
Pg eZ 02 17 49.9
Sg eEN 17 58.4

NIE Δ = 140km
Pg eZ 02 18 02.0
Sg eE 18 19.0

KSP Δ = 193km
Pg eZ 02 18 10.2
Sg eN 18 32.9

APR 28
GIG: φ = 50.250°N, λ = 18.949°E
H = 10:52:33.7, M = 2.3

OJC Δ = 61km
Pg eZ 10 52 45.1
Sg eN 52 53.1

NIE Δ = 135km
Pg eZ 10 52 55.8
(Sg) eE 53 15.2

KSP Δ = 199km
Pg eN 10 53 05.7
Sn eZ 53 29.0

APR 28
GIG: φ = 50.067°N, λ = 18.427°E
H = 13:41:34.0, M = 2.4

RAC Δ = 17km
Pg eZ 13 41 37.7
Sg eNE 41 40.7

OJC Δ = 99km
Pg eZ 13 41 51.0
Sg eE 42 04.7

NIE Δ = 154km
Pg eZ 13 41 59.9
Sg eE 42 20.0

KSP Δ = 174km
Pg eZ 13 42 02.0
Sg eN 42 24.4

APR 29
GIG: φ = 50.068°N, λ = 18.425°E
H = 00:22:55.8, M = 2.1

RAC Δ = 17km
Pg iZ 00 22 59.6 D
Sg eNE 23 02.5

OJC Δ = 99km
Pg eZ 00 23 12.9
Sg eN 23 25.5

KSP Δ = 174km
Pg eZ 00 23 23.8
Sg eE 23 46.1

APR 29
GIG: φ = 49.961°N, λ = 18.562°E
H = 03:39:37.0, M = 2.2

RAC Δ = 29km
Pg eZ 03 39 43.9
Sg eNE 39 48.3

OJC Δ = 93km
Pg eZ 03 39 53.4
Sg eN 40 04.6

KSP Δ = 188km
Pg eZ 03 40 07.0
Sg eE 40 31.2

APR 29
GIG: φ = 50.078°N, λ = 19.127°E
H = 18:59:36.1, M = 2.3

OJC Δ = 50km
Pg eZ 18 59 44.9
Sg eNE 59 51.6

KSP Δ = 218km
Pg eZ 19 00 12.6
Sg eZ 00 39.0

APR 29
GIG: φ = 50.040°N, λ = 18.468°E
H = 22:32:29.7, M = 2.2

RAC Δ = 20km
Pg iZ 22 32 34.3 C
Sg iN 32 37.8

OJC Δ = 97km
Pg eZ 22 32 46.7
Sg eE 32 59.1

KSP Δ = 178km
Pg eZ 22 33 00.8
Sg eZ 33 21.6

APR 30
GIG: φ = 50.067°N, λ = 18.466°E
H = 22:14:00.7, M = 2.4

RAC Δ = 19km
Pg iZ 22 14 05.3 C
Sg eNE 14 08.4

OJC Δ = 97km
Pg eZ 22 14 17.5
Sg eE 14 30.2

KSP Δ = 176km
Pn eZ 22 14 27.6
Pg eN 14 29.1
Sg eN 14 51.3

MAY 2
GIG: φ = 50.072°N, λ = 18.459°E
H = 00:31:23.2, M = 2.7

RAC Δ = 19km
Pg iZ 00 31 27.8 D
Sg eNE 31 30.9

OJC Δ = 97km
Pg eZ 00 31 40.1
Sg eE 31 52.1

NIE Δ = 152km
Pg eZ 00 31 47.5
Sg eE 32 07.0

KSP Δ = 176km
Pg eZ 00 31 51.7
Sg eN 32 13.4

KWP Δ = 308km
Pg eZ 00 32 14.6
Sn eNE 32 44.5
Sg eNE 32 52.8

MAY 2
GIG: φ = 49.962°N, λ = 18.562°E
H = 21:59:45.1, M = 2.1

RAC Δ = 30km
Pg eZ 21 59 51.8
Sg eNE 59 57.2

OJC Δ = 93km
Pg eZ 22 00 01.4
(Sg) eE 00 11.6

NIE Δ = 140km
Pg eZ 22 00 07.8
Sg eN 00 26.3

KSP Δ = 188km
Pg eZ 22 00 15.9
Sg eZ 00 39.8

MAY 3
GIG: φ = 50.218°N, λ = 19.131°E
H = 15:07:54.9, M = 2.2

OJC Δ = 47km
Pg eZ 15 08 03.2
Sg eN 08 09.7

NIE Δ = 123km
Pg eZ 15 08 14.8
(Sg) eE 08 32.3

KSP Δ = 213km
Pg eZ 15 08 30.6
Sg eE 08 55.8

MAY 4
GIG: φ = 50.068°N, λ = 18.425°E
H = 02:13:51.1, M = 2.5

RAC Δ = 16km
Pg iZ 02 13 55.0 D
Sg eNE 13 58.1

OJC Δ = 100km
Pg eZ 02 14 08.0
Sg eN 14 21.0

NIE Δ = 154km
Pg eZ 02 14 17.4
Sg eE 14 36.8

KSP Δ = 174km
Pg eZ 02 14 18.9
Sg eN 14 40.5

MAY 5
GIG: φ = 50.259°N, λ = 18.860°E
H = 05:08:04.6, M = 2.5

RAC Δ = 52km
Pg eZ 05 08 14.7
Sg eN 08 21.7

OJC Δ = 67km
Pg eZ 05 08 16.8
Sg eE 08 25.0

NIE Δ = 141km
Pg eZ 05 08 29.0
Sg eN 08 46.9

KSP Δ = 193km
Pg eZ 05 08 37.4
Sg eE 09 00.2

MAY 5
GIG: φ = 50.077°N, λ = 19.126°E
H = 16:55:16.5, M = 2.4

OJC Δ = 51km
Pg eZ 16 55 25.6
Sg eN 55 32.3

NIE Δ = 113km
Pg eZ 16 55 36.2

KSP Δ = 218km
Pn eZ 16 55 50.0
Sg eZ 56 19.5

MAY 5
GIG: φ = 50.077°N, λ = 19.123°E
H = 23:56:45.5, M = 2.3

OJC Δ = 51km
Pg eZ 23 56 54.5
Sg eE 57 01.1

RAC Δ = 66km
Pg eZ 23 56 57.5
Sg eNE 57 05.5

NIE Δ = 113km
Pg eZ 23 57 05.3
(Sg) eE 57 21.0

KSP Δ = 218km
Pg eZ 23 57 21.4
Sg eE 57 48.1

MAY 6
GIG: φ = 50.259°N, λ = 18.862°E
H = 09:28:16.2, M = 2.7

NIE Δ = 140km
Pg eZ 09 28 40.4
Sg eE 28 57.2

KSP Δ = 193km
Pg iZ 09 28 48.5
Sg eN 29 11.0

MAY 6
GIG: φ = 50.259°N, λ = 18.884°E
H = 15:25:01.2, M = 2.1

NIE Δ = 139km
Pg eZ 15 25 24.7
Sg eE 25 42.6

KSP Δ = 194km
Pg eE 15 25 33.3
Sg eN 25 55.7

MAY 6
GIG: φ = 50.043°N, λ = 18.465°E
H = 21:09:05.0, M = 2.4

RAC Δ = 20km
Pg iZ 21 09 09.2 C
Sg eNE 09 13.0

NIE Δ = 150km
Pg eZ 21 09 30.3
Sg eN 09 49.5

KSP Δ = 178km
Pn eZ 21 09 33.8
Pg eZ 09 36.0
Sg eZ 09 55.1

MAY 6
GIG: φ = 50.067°N, λ = 18.423°E
H = 23:27:09.6, M = 2.2

RAC Δ = 16km
Pg iZ 23 27 13.2 D
Sg eNE 27 16.2

NIE Δ = 154km
Pg eZ 23 27 36.2
Sg eE 27 56.3

MAY 10
GIG: φ = 50.067°N, λ = 18.424°E
H = 01:34:08.5, M = 2.4

RAC Δ = 16km
Pg iZ 01 34 12.2 D
Sg eNE 34 15.4

NIE Δ = 154km
Pg iZ 01 34 35.2 D
Sg eE 34 55.1

KSP Δ = 174km
Pg eE 01 34 36.5
Sg eN 34 59.2

MAY 10
GIG: φ = 50.208°N, λ = 19.061°E
H = 15:28:25.1, M = 2.4

OJC Δ = 53km
Pg eZ 15 28 34.5
Sg eE 28 41.5

NIE Δ = 126km
Pg eZ 15 28 46.7
Sg eN 29 03.9

KSP Δ = 208km
Pg eZ 15 28 59.1
Sg eN 29 25.6

MAY 10
GIG: φ = 50.042°N, λ = 18.465°E
H = 20:46:41.4, M = 2.4

RAC Δ = 20km
Pg eZ 20 46 45.8
Sg eNE 46 49.4

OJC Δ = 97km
Pg eZ 20 46 57.9
Sg eE 47 10.4

NIE Δ = 150km
Pg eZ 20 47 07.0
Sg eE 47 26.7

KSP Δ = 178km
Pg eZ 20 47 10.1
Sg eE 47 31.7

MAY 11
GIG: φ = 50.077°N, λ = 19.125°E
H = 02:19:44.5, M = 2.2

OJC Δ = 51km
Pg eZ 02 19 53.2
Sg eE 19 59.9

NIE Δ = 113km
Pg eZ 02 20 03.7

KSP Δ = 218km
Pg eZ 02 20 19.9
Sg eE 20 46.9

MAY 11
φ = 50.17°N, λ = 19.27°E
H = 09:50:50.8, M = 2.2

OJC Δ = 38km
Pg eZ 09 50 58.2
Sg eE 51 02.6

NIE Δ = 112km
Pg eZ 09 51 09.0
Sg eE 51 24.8

KSP Δ = 224km
Pg eE 09 51 27.6
Sn eN 51 52.7

MAY 11
GIG: φ = 50.068°N, λ = 18.423°E
H = 14:55:51.6, M = 2.4

RAC Δ = 16km
Pg eZ 14 55 55.3
Sg eNE 55 58.4

OJC Δ = 99km
Pg eZ 14 56 08.1
Sg eN 56 21.1

NIE Δ = 154km
Pg eZ 14 56 18.3
Sg eE 56 37.3

MAY 11
GIG: φ = 50.259°N, λ = 18.884°E
H = 19:41:49.5, M = 2.3

OJC Δ = 65km
Pg eZ 19 42 01.2
Sg eE 42 09.8

NIE Δ = 139km
Pg eZ 19 42 13.8
Sg eE 42 32.2

KSP Δ = 194km
Pg eZ 19 42 22.3
Sg eN 42 45.0

MAY 11
GIG: φ = 50.077°N, λ = 19.127°E
H = 23:30:33.3, M = 2.3

OJC Δ = 50km
Pg eZ 23 30 42.3
Sg eNE 30 48.9

RAC Δ = 66km
Pg eZ 23 30 45.7
Sg eNE 30 54.2

NIE Δ = 113km
Pg eZ 23 30 52.8

KSP Δ = 218km
Pg eEZ 23 31 09.8
Sg eN 31 35.8

MAY 12
GIG: φ = 50.067°N, λ = 18.425°E
H = 01:54:27.5, M = 2.0

RAC Δ = 16km
Pg iZ 01 54 31.2 C
Sg eNE 54 34.2

OJC Δ = 100km
Pg eZ 01 54 44.2
Sg eE 54 58.0

NIE Δ = 154km
Pg iZ 01 54 54.2 D
Sg eN 55 14.4

MAY 12
GIG: φ = 50.259°N, λ = 18.860°E
H = 11:13:27.0, M = 2.4

OJC Δ = 67km
Pg eZ 11 13 39.4
Sg eN 13 47.9

NIE Δ = 141km
Pg eZ 11 13 52.5
Sg eE 14 10.0

KSP Δ = 193km
Pg eZ 11 14 00.0
Sg eN 14 22.3

MAY 12
GIG: φ = 50.260°N, λ = 18.913°E
H = 18:03:19.8, M = 2.3

OJC Δ = 64km
Pg eZ 18 03 31.4 D
Sg eN 03 39.4

NIE Δ = 138km
Pg eZ 18 03 44.0
Sg eN 04 01.7

KSP Δ = 196km
Pg eZ 18 03 52.9
Sg eN 04 16.0

MAY 12
GIG: φ = 50.203°N, λ = 19.123°E
H = 21:02:41.8, M = 2.3

OJC Δ = 48km
Pg eZ 21 02 50.3
Sg eN 02 56.7

NIE Δ = 122km
Pg eZ 21 03 03.1
Sg eN 03 19.1

KSP Δ = 213km
Pg eZ 21 03 18.2
(Sn) eE 03 42.0

MAY 13
φ = 50.26°N, λ = 18.82°E
H = 03:53:03.4, M = 2.3

RAC Δ = 50km
Pg eZ 03 53 13.1
Sg eNE 53 18.4

OJC Δ = 69km
Pg eZ 03 53 16.3
Sg eN 53 25.1

NIE Δ = 142km
Pg eZ 03 53 27.8
Sg eE 53 45.5

KSP Δ = 190km
Pn eZ 03 53 33.2
Pg eE 53 35.8
Sg eZ 53 59.1

MAY 13
GIG: φ = 50.068°N, λ = 18.425°E
H = 04:56:40.4, M = 2.2

RAC Δ = 17km
Pg eZ 04 56 44.2
Sg eNE 56 47.3

OJC Δ = 99km
Pg eZ 04 56 57.4
Sg eN 57 10.4

NIE Δ = 154km
Pg eZ 04 57 07.3
Sg eE 57 27.1

MAY 13
GIG: φ = 50.044°N, λ = 18.466°E
H = 10:47:00.2, M = 2.2

RAC Δ = 20km
Pg eZ 10 47 04.9
Sg eNE 47 07.8

OJC Δ = 97km
Pg eZ 10 47 17.0
Sg eE 47 29.3

NIE Δ = 150km
Pg eZ 10 47 26.7
(Sg) eE 47 46.4

KSP Δ = 178km
Pg eZ 10 47 29.2
Sg Z 47 51.1

MAY 13

GIG: φ = 50.104°N, λ = 19.171°E
H = 11:12:29.6, M = 2.6

OJC	Δ = 46km		
	Pg eZ	11 12 37.3	
	Sg iN	12 43.5	
NIE	Δ = 112km		
	Pg eZ	11 12 48.5	
	Sg eN	13 04.3	
KSP	Δ = 220km		
	Pg eZ	11 13 07.3	
	Sn eN	13 31.2	

MAY 13

GIG: φ = 50.075°N, λ = 19.128°E
H = 15:48:55.9, M = 2.4

OJC	Δ = 50km		
	Pg eZ	15 49 04.2	
	Sg eN	49 10.7	
NIE	Δ = 113km		
	Pg eZ	15 49 14.7	
	(Sg) eE	49 31.2	
KSP	Δ = 218km		
	Pn eE	15 49 30.1	
	Pg eE	49 33.1	
	Sg eZ	49 58.1	

MAY 14

GIG: φ = 50.239°N, λ = 18.980°E
H = 00:46:26.2, M = 2.1

OJC	Δ = 58km		
	Pg eZ	00 46 36.8	
	Sg eE	46 44.3	
NIE	Δ = 132km		
	Pg eZ	00 46 49.3	
	Sg eE	47 06.1	
KSP	Δ = 202km		
	Pg eZ	00 46 59.8	
	Sg eZ	47 23.9	

MAY 14

GIG: φ = 50.068°N, λ = 18.425°E
H = 01:35:11.1, M = 2.2

RAC	Δ = 16km		
	Pg eZ	01 35 14.8	
	Sg eNE	35 17.8	
OJC	Δ = 99km		
	Pg eZ	01 35 27.9	
	Sg eN	35 40.8	
NIE	Δ = 154km		
	Pg eZ	01 35 37.8	
	Sg eNE	35 57.9	
KSP	Δ = 174km		
	Pg eZ	01 35 41.1	
	Sg eN	36 00.3	

MAY 14

φ = 50.09°N, λ = 18.42°E
H = 04:40:51.4, M = 2.1

RAC	Δ = 16km		
	Pg eZ	04 40 55.1	
	Sg eNE	40 58.0	
OJC	Δ = 99km		
	Pg eZ	04 41 08.2	
	Sg eE	41 21.1	
NIE	Δ = 156km		
	Pg eZ	04 41 17.9	
	Sg eZ	41 38.1	

MAY 14

GIG: φ = 50.039°N, λ = 18.464°E
H = 05:00:16.9, M = 2.4

RAC	Δ = 20km		
	Pg eZ	05 00 21.5	
	Sg eNE	00 24.5	
OJC	Δ = 98km		
	Pg eZ	05 00 33.8	
	Sg eN	00 45.8	
NIE	Δ = 150km		
	Pg Z	05 00 43.1	C
	Sg eE	01 02.8	
KSP	Δ = 178km		
	Pg eZ	05 00 45.8	
	Sn eE	01 06.7	
	Sg eN	01 08.6	

MAY 14

GIG: φ = 50.041°N, λ = 18.466°E
H = 19:09:56.9, M = 2.4

RAC	Δ = 20km		
	Pg iZ	19 10 01.5	C
	Sg eNE	10 05.1	

OJC Δ = 97km
Pg eZ 19 10 13.6
Sg eE 10 26.1

NIE Δ = 150km
Pg eZ 19 10 22.5
Sg eN 10 41.8

KSP Δ = 178km
Pg eZ 19 10 25.7
Sn eE 10 46.5

MAY 15
GIG: φ = 50.276°N, λ = 18.889°E
H = 00:33:30.6, M = 2.4

RAC Δ = 53km
Pg eZ 00 33 40.8
Sg eNE 33 47.0

OJC Δ = 65km
Pg eZ 00 33 42.2
Sg eNE 33 50.6

NIE Δ = 140km
Pg eZ 00 33 54.9
Sg eN 34 12.4

KSP Δ = 194km
Pg eZ 00 34 03.3
Sg eN 34 26.0

MAY 16
GIG: φ = 50.259°N, λ = 18.860°E
H = 15:47:38.5, M = 2.6

OJC Δ = 67km
Pg eZ 15 47 50.3
Sg eE 47 58.9

NIE Δ = 140km
Pg eZ 15 48 02.5
Sg eN 48 20.4

KSP Δ = 193km
Pg eZ 15 48 10.8
Sg eN 48 33.6

MAY 16
GIG: φ = 50.075°N, λ = 19.125°E
H = 19:35:47.9, M = 2.3

OJC Δ = 51km
Pg eZ 19 35 57.2
Sg eN 36 03.7

NIE Δ = 113km
Pg eZ 19 36 07.7

KSP Δ = 218km
Pg eE 19 36 24.7
Sg eZ 36 50.7

MAY 17
φ = 50.19°N, λ = 19.25°E
H = 02:32:14.5, M = 2.3

OJC Δ = 39km
Pg eZ 02 32 21.8
Sg eN 32 26.6

NIE Δ = 115km
Pg eZ 02 32 34.5
Sg eN 32 49.9

KSP Δ = 222km
Pg eN 02 32 51.3
Sg eN 33 19.4

MAY 17
GIG: φ = 50.078°N, λ = 19.124°E
H = 02:41:40.5, M = 2.2

OJC Δ = 50km
Pg eZ 02 41 49.0
Sg eN 41 55.7

NIE Δ = 113km
Pg eZ 02 41 59.5
(Sg) eE 42 15.5

KSP Δ = 218km
Pg eZ 02 42 16.9
Sg eE 42 42.6

MAY 17
GIG: φ = 50.068°N, λ = 18.423°E
H = 05:55:22.7, M = 2.1

RAC Δ = 17km
Pg eZ 05 55 25.8
Sg eNE 55 28.8

OJC Δ = 99km
Pg eZ 05 55 39.1
Sg eE 55 52.9

NIE Δ = 154km
Pg eZ 05 55 48.6
(Sg) eE 56 09.0

KSP Δ = 174km
Pg eN 05 55 52.8
Sn eN 56 11.2
(Sg) eN 56 14.3

MAY 17

GIG: φ = 50.215°N, λ = 19.064°E
H = 17:40:10.4, M = 2.4

OJC	Δ = 52km		
	Pg eZ	17 40 19.3	
	Sg eN	40 26.3	
NIE	Δ = 127km		
	Pg eZ	17 40 32.3	
	Sg eN	40 48.4	
KSP	Δ = 208km		
	Pg eZ	17 40 44.3	
	Sg eZ	41 09.6	

MAY 18

GIG: φ = 50.068°N, λ = 18.460°E
H = 05:38:53.7, M = 2.5

RAC	Δ = 19km		
	Pg iZ	05 38 58.0	D
	Sg eNE	39 01.1	
OJC	Δ = 97km		
	Pg eZ	05 39 10.2	
	Sg eE	39 22.1	
NIE	Δ = 152km		
	Pg eZ	05 39 20.1	
	Sg eN	39 39.0	
KSP	Δ = 176km		
	Pn eZ	05 39 21.7	
	Pg eZ	39 24.6	
	Sg eE	39 44.1	

MAY 18

GIG: φ = 50.164°N, λ = 19.309°E
H = 12:30:08.8, M = 2.2

OJC	Δ = 36km		
	Pg iZ	12 30 14.8	C
	Sg eN	30 19.4	
NIE	Δ = 109km		
	Pg eZ	12 30 27.5	
KSP	Δ = 227km		
	Pg eN	12 30 47.0	
	Sn eE	31 12.4	

MAY 18

GIG: φ = 50.068°N, λ = 18.425°E
H = 17:06:58.3, M = 2.4

RAC	Δ = 17km		
	Pg eZ	17 07 01.9	
	Sg eNE	07 05.0	
OJC	Δ = 99km		
	Pg eZ	17 07 15.3	
	Sg eN	07 28.1	
NIE	Δ = 154km		
	Pg eZ	17 07 24.0	
	Sg eN	07 44.3	

MAY 18

GIG: φ = 50.236°N, λ = 19.040°E
H = 20:16:14.7, M = 2.1

OJC	Δ = 54km		
	Pg eZ	20 16 24.5	
	Sg eN	16 31.6	
NIE	Δ = 130km		
	Pg eZ	20 16 37.6	
	Sg eE	16 54.3	
KSP	Δ = 206km		
	Pg eZ	20 16 48.1	
	Sg eZ	17 12.8	

MAY 18

GIG: φ = 50.208°N, λ = 19.061°E
H = 21:13:21.8, M = 2.3

OJC	Δ = 53km		
	Pg eZ	21 13 31.6	
	Sg eE	13 38.1	
NIE	Δ = 126km		
	Pg eZ	21 13 43.7	
	Sg eN	13 59.8	
KSP	Δ = 208km		
	(Pn) eZ	21 13 53.5	
	Pg eZ	13 56.5	
	Sg eZ	14 21.1	

MAY 18

φ = 50.06°N, λ = 18.45°E
H = 22:36:28.9, M = 2.0

RAC	Δ = 19km		
	Pg eZ	22 36 33.0	
	Sg eNE	36 36.6	
OJC	Δ = 98km		
	Pg eZ	22 36 45.7	
	Sg eN	36 58.5	
NIE	Δ = 152km		
	Pg eZ	22 36 54.8	
	Sg eE	37 14.8	

MAY 19

φ = 50.07°N, λ = 18.47°E
H = 00:00:15.2, M = 2.1

RAC Δ = 20km
Pg eZ 00 00 19.5
Sg eNE 00 23.4

OJC Δ = 96km
Pg eZ 00 00 31.6
Sg eE 00 44.0

NIE Δ = 151km
Pg eZ 00 00 41.3
Sg eE 01 00.2

KSP Δ = 177km
Pn eZ 00 00 42.9
Sg eN 01 05.6

MAY 20

φ = 50.28°N, λ = 18.86°E
H = 01:16:19.7, M = 2.0

OJC Δ = 67km
Pg eZ 01 16 31.8
Sg eN 16 40.1

NIE Δ = 141km
Pg eZ 01 16 43.9
Sg eE 17 02.1

KSP Δ = 192km
Pg eZ 01 16 52.0
Sg eZ 17 15.2

MAY 20
GIG: **φ = 49.961°N, λ = 18.562°E**
H = 17:34:25.9, M = 2.2

OJC Δ = 93km
Pg eZ 17 34 41.6
Sg eN 34 53.1

NIE Δ = 140km
Pg eZ 17 34 50.4
Sg eN 35 08.6

KSP Δ = 188km
Pg eZ 17 34 57.1
Sg eE 35 19.4

MAY 20
GIG: **φ = 50.070°N, λ = 18.462°E**
H = 18:03:54.4, M = 2.4

RAC Δ = 19km
Pg iZ 18 03 58.8 D
Sg eNE 04 02.0

OJC Δ = 97km
Pg eZ 18 04 11.0
Sg eE 04 22.9

NIE Δ = 152km
Pg eZ 18 04 21.1
Sg eE 04 40.4

KSP Δ = 176km
Pg eZ 18 04 22.8
Sg eN 04 44.4

MAY 20
GIG: **φ = 50.066°N, λ = 18.464°E**
H = 21:06:46.1, M = 2.3

RAC Δ = 20km
Pg eZ 21 06 50.4
Sg eNE 06 53.9

OJC Δ = 97km
Pg eZ 21 07 02.7
Sg eN 07 14.6

NIE Δ = 151km
Pg eZ 21 07 12.0
Sg eE 07 31.3

KSP Δ = 176km
Pg eZ 21 07 14.9
Sg eN 07 36.4

MAY 21
GIG: **φ = 50.043°N, λ = 18.462°E**
H = 05:12:14.2, M = 2.1

RAC Δ = 20km
Pg eZ 05 12 18.3
Sg eNE 12 21.9

OJC Δ = 98km
Pg eZ 05 12 30.6
Sg eN 12 44.1

NIE Δ = 150km
Pg eZ 05 12 40.2
Sg eE 12 59.7

MAY 21
GIG: **φ = 50.068°N, λ = 18.426°E**
H = 06:54:19.9, M = 2.1

RAC Δ = 16km
Pg eZ 06 54 23.8
Sg eNE 54 27.0

OJC Δ = 99km
Pg eZ 06 54 36.9
Sg eN 54 49.7

NIE Δ = 154km
Pg eZ 06 54 46.8
Sg eE 55 06.6

MAY 21

φ = 50.29°N, λ = 18.81°E
H = 17:48:07.0, M = 2.0

OJC Δ = 70km
Pg eZ 17 48 19.3
Sg eE 48 28.6

NIE Δ = 145km
Pg eZ 17 48 32.2
Sg eE 48 50.4

KSP Δ = 188km
Pg eE 17 48 38.6
Sg eN 49 01.3

MAY 23
GIG: **φ = 50.070°N, λ = 18.462°E**
H = 05:17:47.0, M = 2.2

RAC Δ = 19km
Pg eZ 05 17 51.0
Sg eNE 17 54.2

OJC Δ = 97km
Pg eZ 05 18 03.8
Sg eN 18 16.5

NIE Δ = 152km
Pg eZ 05 18 12.8
Sg eE 18 32.6

MAY 23
GIG: **φ = 50.075°N, λ = 19.128°E**
H = 08:51:48.7, M = 2.4

OJC Δ = 50km
Pg eZ 08 51 57.7
Sg eN 52 04.2

NIE Δ = 113km
Pg eZ 08 52 08.1
(Sg) eE 52 24.2

KSP Δ = 218km
Pg eZ 08 52 25.1
Sg eZ 52 51.4

MAY 23
GIG: **φ = 50.172°N, λ = 19.298°E**
H = 14:02:37.4, M = 2.3

OJC Δ = 36km
Pg eZ 14 02 43.8
Sg eN 02 48.5

NIE Δ = 111km
Pg eZ 14 02 56.4
Sg eE 03 11.5

KSP Δ = 226km
Pg eZ 14 03 14.8
Sg eZ 03 40.8

MAY 23

φ = 50.24°N, λ = 19.09°E
H = 15:16:48.0, M = 2.3

OJC Δ = 51km
Pg eZ 15 16 56.9
Sg eE 17 04.4

NIE Δ = 127km
Pg eZ 15 17 09.6
Sg eE 17 26.3

KSP Δ = 209km
Pg eE 15 17 22.0
Sg eN 17 47.9

MAY 24
GIG: **φ = 50.244°N, λ = 18.986°E**
H = 03:04:00.1, M = 2.2

OJC Δ = 58km
Pg eZ 03 04 10.1
Sg eN 04 18.5

NIE Δ = 133km
Pg eZ 03 04 22.4
Sg eN 04 40.2

KSP Δ = 202km
Pg eZ 03 04 34.2
Sg eE 04 57.8

MAY 24
GIG: **φ = 50.259°N, λ = 18.884°E**
H = 03:50:14.6, M = 2.4

OJC Δ = 65km
Pg eZ 03 50 26.0
Sg eE 50 34.5

NIE Δ = 139km
Pg eZ 03 50 38.2
Sg eN 50 55.7

KSP Δ = 194km
Pg eZ 03 50 47.1
Sg eN 51 09.9

MAY 24

GIG: φ = 50.260°N, λ = 18.859°E
H = 16:11:25.1, M = 2.4

OJC	Δ = 67km		
	Pg eZ	16	11 36.8
	Sg eE		11 45.5
NIE	Δ = 140km		
	Pg eZ	16	11 49.3
	Sg eN		12 06.7
KSP	Δ = 193km		
	Pg eZ	16	11 57.5
	Sg eN		12 19.9

MAY 24

GIG: φ = 50.103°N, λ = 19.172°E
H = 21:13:39.7, M = 2.4

OJC	Δ = 46km		
	Pg eZ	21	13 47.6
	Sg eN		13 53.7
NIE	Δ = 112km		
	Pg eZ	21	13 58.8
	(Sg) eE		14 14.8
KSP	Δ = 220km		
	Pg eZ	21	14 17.5
	Sn eN		14 41.4
	Sg eN		14 43.3

MAY 25

GIG: φ = 50.065°N, λ = 18.422°E
H = 10:44:58.9, M = 2.2

RAC	Δ = 17km		
	Pg eZ	10	45 02.7
	Sg eNE		45 05.7
OJC	Δ = 100km		
	Pg eZ	10	45 15.8
	Sg eE		45 28.8
KSP	Δ = 174km		
	Pg eZ	10	45 28.8
	Sg eE		45 49.0

MAY 25

GIG: φ = 50.205°N, λ = 19.070°E
H = 13:29:00.6, M = 2.3

OJC	Δ = 52km		
	Pg eZ	13	29 09.7
	Sg eN		29 16.9
NIE	Δ = 125km		
	Pg eZ	13	29 22.4
	Sg eE		29 38.7
KSP	Δ = 209km		
	Pg eE	13	29 35.2
	Sg eN		29 59.5

MAY 25

φ = 50.09°N, λ = 18.44°E
H = 14:03:17.0, M = 2.2

RAC	Δ = 18km		
	Pg eZ	14	03 20.8
	Sg eNE		03 24.5
OJC	Δ = 98km		
	Pg eZ	14	03 33.4
	Sg eE		03 46.5
NIE	Δ = 154km		
	Pg eZ	14	03 42.8
	Sg eE		04 02.3

MAY 26

GIG: φ = 50.212°N, λ = 19.140°E
H = 00:08:48.9, M = 2.3

OJC	Δ = 47km		
	Pg eZ	00	08 56.9
	Sg eN		09 03.1
NIE	Δ = 122km		
	Pg eZ	00	09 09.3
	Sg eN		09 26.1
KSP	Δ = 214km		
	Pg eZ	00	09 24.6
	Sn eZ		09 48.0

MAY 26

GIG: φ = 50.366°N, λ = 18.908°E
H = 00:38:13.5, M = 2.4

OJC	Δ = 65km		
	Pg eZ	00	38 25.0
	Sg eE		38 33.3
NIE	Δ = 146km		
	Pg eZ	00	38 38.1
	Sg eN		38 55.9
KWP	Δ = 284km		
	Pg eZ	00	39 02.2

MAY 27

GIG: φ = 50.043°N, λ = 18.465°E
H = 22:05:43.2, M = 2.1

RAC Δ = 20km
Pg eZ 22 05 47.2
Sg eNE 05 51.4

OJC Δ = 98km
Pg eZ 22 05 59.4
Sg eN 06 13.0

NIE Δ = 150km
Pg eZ 22 06 08.4
Sg eE 06 27.9

MAY 28

GIG: φ = 50.243°N, λ = 18.924°E
H = 04:37:18.7, M = 2.1

OJC Δ = 62km
Pg eZ 04 37 29.7
Sg eE 37 37.7

NIE Δ = 136km
Pg eZ 04 37 42.5
Sg eE 37 59.7

KSP Δ = 198km
Pg eZ 04 37 51.5
Sg eZ 38 15.6

MAY 28

φ = 50.24°N, λ = 19.05°E
H = 10:13:07.1, M = 2.2

OJC Δ = 54km
Pg eZ 10 13 16.7
Sg eE 13 23.4

NIE Δ = 129km
Pg eZ 10 13 29.5
Sg eE 13 45.1

KSP Δ = 206km
Pg eZ 10 13 41.3
Sg eN 14 07.0

MAY 28

GIG: φ = 50.079°N, λ = 19.129°E
H = 17:43:16.2, M = 2.4

OJC Δ = 50km
Pg eZ 17 43 24.6
Sg eE 43 31.0

NIE Δ = 113km
Pg eZ 17 43 34.9
(Sg) eE 43 51.0

KSP Δ = 218km
Pg eE 17 43 51.9
Sg eN 44 17.9

MAY 30

GIG: φ = 50.205°N, λ = 19.069°E
H = 14:57:20.3, M = 2.2

OJC Δ = 52km
Pg eZ 14 57 29.4
Sg eNE 57 36.7

NIE Δ = 125km
Pg eZ 14 57 42.2
Sg eN 57 58.0

KSP Δ = 209km
Pg eZ 14 57 54.6
Sg eE 58 19.5

MAY 30

GIG: φ = 49.960°N, λ = 18.561°E
H = 19:52:11.0, M = 2.2

RAC Δ = 29km
Pg eZ 19 52 17.7
Sg eNE 52 22.2

OJC Δ = 93km
Pg eZ 19 52 27.5
Sg eN 52 40.2

NIE Δ = 140km
Pg eZ 19 52 36.2
Sg eN 52 54.5

KSP Δ = 188km
Pn eZ 19 52 40.9
Sg eN 53 04.5

MAY 31

GIG: φ = 50.259°N, λ = 18.860°E
H = 10:52:06.5, M = 2.6

OJC Δ = 66km
Pg eZ 10 52 18.4
Sg eEN 52 26.9

NIE Δ = 140km
Pg eZ 10 52 31.6
Sg eN 52 48.5

MAY 31

GIG: φ = 50.104°N, λ = 19.171°E
H = 23:40:59.9, M = 2.4

OJC Δ = 46km
Pg eZ 23 41 07.8
Sg eN 41 14.0

NIE Δ = 111km
Pg eZ 23 41 18.9
Sg eE 41 34.2

JUN 1
φ = 50.25°N, λ = 18.77°E
H = 00:31:20.5, M = 2.1

RAC Δ = 45km, M = 1.9
Pg eZ 00 31 29.3
Sg eNE 31 34.5

OJC Δ = 73km
Pg eZ 00 31 33.8
Sg eN 31 42.4

NIE Δ = 144km
Pg eZ 00 31 45.0
Sg eE 32 03.6

KSP Δ = 187km
Pg eZ 00 31 51.3
Sg eN 32 15.0

JUN 1
GIG: φ = 50.238°N, λ = 19.071°E
H = 19:14:36.9, M = 2.3

OJC Δ = 52km
Pg eZ 19 14 46.0
Sg eE 14 53.0

NIE Δ = 127km
Pg eZ 19 14 59.1
Sg eN 15 15.3

KSP Δ = 208km
Pg eZ 19 15 11.6
Sg eE 15 36.2

JUN 3
GIG: φ = 50.259°N, λ = 18.860°E
H = 00:34:47.5, M = 2.3

RAC Δ = 52km
Pg eZ 00 34 57.1
Sg eN 35 04.5

OJC Δ = 67km
Pg iZ 00 34 59.5 C
Sg eN 35 07.1

NIE Δ = 140km
Pg eZ 00 35 11.5
Sg eN 35 29.5

KSP Δ = 193km
Pg iZ 00 35 20.0
Sg eN 35 43.0

JUN 3
GIG: φ = 50.241°N, λ = 18.925°E
H = 14:06:08.1, M = 2.3

OJC Δ = 62km
Pg eZ 14 06 18.9
Sg eN 06 26.7

NIE Δ = 136km
Pg eZ 14 06 32.1
Sg eE 06 48.5

KSP Δ = 198km
Pg eZ 14 06 41.5
Sg eN 07 04.2

JUN 3
GIG: φ = 50.210°N, λ = 19.062°E
H = 20:50:28.8, M = 2.3

OJC Δ = 52km
Pg eZ 20 50 37.7
Sg eE 50 44.7

NIE Δ = 126km
Pg eZ 20 50 50.3
Sg eN 51 06.3

KSP Δ = 209km
Pg eZ 20 51 04.2
Sg eN 51 30.0

JUN 4
GIG: φ = 50.218°N, λ = 19.067°E
H = 22:52:57.7, M = 2.2

OJC Δ = 52km
Pg eZ 22 53 07.0
Sg iN 53 14.2

RAC Δ = 64km
Pg eZ 22 53 08.6
Sg eNE 53 17.0

NIE Δ = 126km
Pg eZ 22 53 19.9
Sg eN 53 35.9

KSP Δ = 208km
Pg eE 22 53 32.2
Sg eE 53 56.5

JUN 5
GIG: φ = 50.363°N, λ = 18.873°E
H = 12:06:04.4, M = 2.6

RAC Δ = 58km
Pg eZ 12 06 15.3
Sg eNE 06 23.1

OJC Δ = 68km
Pg eZ 12 06 16.3
Sg eN 06 25.9

NIE Δ = 148km
Pg eZ 12 06 29.4
Sg eE 06 47.7

KSP Δ = 190km
Pg eZ 12 06 36.2
Sg eN 06 59.5

JUN 6
GIG: φ = 50.259°N, λ = 18.860°E
H = 13:23:39.8, M = 2.5

OJC Δ = 67km
Pg eZ 13 23 51.5
Sg eE 24 00.1

NIE Δ = 141km
Pg eZ 13 24 03.9
Sg eN 24 21.3

KSP Δ = 193km
Pg eZ 13 24 12.0
Sg eN 24 34.6

JUN 6
GIG: φ = 50.103°N, λ = 19.170°E
H = 15:53:45.8, M = 2.2

OJC Δ = 47km
Pg eZ 15 53 54.2
Sg eN 54 00.4

NIE Δ = 112km
Pg eZ 15 54 05.7
(Sg) eE 54 20.8

KSP Δ = 220km
Pg eE 15 54 22.2
Sg eN 54 47.9

JUN 6
GIG: φ = 50.078°N, λ = 19.127°E
H = 19:04:51.9, M = 2.4

OJC Δ = 50km
Pg eZ 19 05 00.6
Sg eN 05 07.0

NIE Δ = 113km
Pg eZ 19 05 10.9
(Sg) eE 05 26.9

KSP Δ = 218km
Pg eZ 19 05 27.7
Sg eZ 05 54.4

JUN 7
GIG: φ = 50.044°N, λ = 18.466°E
H = 03:30:12.5, M = 2.6

RAC Δ = 20km
Pg eZ 03 30 16.9
Sg eNE 30 20.4

OJC Δ = 97km
Pg eZ 03 30 29.0
Sg eE 30 41.6

NIE Δ = 150km
Pg eZ 03 30 37.7
(Sg) eN 30 58.8

KSP Δ = 178km
Pg eZ 03 30 41.1
Sg eN 31 03.5

JUN 8
φ = 50.24°N, λ = 18.90°E
H = 06:09:46.6, M = 2.3

OJC Δ = 64km
Pg eZ 06 09 58.1
Sg eN 10 07.0

NIE Δ = 137km
Pg eZ 06 10 09.9
Sg eN 10 28.0

KSP Δ = 196km
Pg eE 06 10 18.8
Sg eN 10 42.0

JUN 8
GIG: φ = 50.244°N, λ = 18.926°E
H = 10:33:27.8, M = 2.2

OJC Δ = 62km
Pg eZ 10 33 39.0
Sg eE 33 47.1

NIE Δ = 136km
Pg eZ 10 33 52.5
Sg eE 34 08.6

KSP Δ = 198km
Pg eZ 10 34 00.7
Sg eE 34 24.8

JUN 8
GIG: φ = 50.238°N, λ = 19.069°E
H = 13:02:49.0, M = 2.4

OJC Δ = 52km
Pg eZ 13 02 58.3
Sg eE 03 05.9

NIE Δ = 128km
Pg eZ 13 03 11.0
Sg eE 03 28.0

KSP Δ = 207km
Pn eE 13 03 21.2
Pg eE 03 23.6
Sg eZ 03 47.9

JUN 8
GIG: φ = 50.104°N, λ = 19.171°E
H = 21:38:10.4, M = 2.4

OJC Δ = 46km
Pg eZ 21 38 18.6
Sg eN 38 24.8

RAC Δ = 70km
Pg eZ 21 38 23.0
Sg eNE 38 32.1

NIE Δ = 112km
Pg eZ 21 38 29.6
Sg eE 38 45.1

KSP Δ = 220km
Pg eZ 21 38 47.1
Sg eN 39 12.4

JUN 8
GIG: φ = 50.171°N, λ = 19.298°E
H = 23:43:09.6, M = 2.2

OJC Δ = 36km
Pg eZ 23 43 15.4
Sg eN 43 20.2

NIE Δ = 111km
Pg eZ 23 43 28.0
Sg eE 43 43.2

KSP Δ = 226km
Pg eE 23 43 48.8
Sn eN 44 12.1

JUN 9
GIG: φ = 50.273°N, λ = 18.889°E
H = 15:40:10.0, M = 2.5

OJC Δ = 64km
Pg eZ 15 40 21.6
Sg eZ 40 29.9

NIE Δ = 139km
Pg eZ 15 40 34.1
Sg eE 40 52.1

KSP Δ = 195km
Pg eZ 15 40 42.8
Sn eZ 41 04.0
Sg eN 41 06.4

JUN 10
GIG: φ = 50.243°N, λ = 18.998°E
H = 00:21:02.8, M = 2.3

OJC Δ = 57km
Pg eZ 00 21 12.9
Sg eZE 21 20.4

NIE Δ = 132km
Pg eZ 00 21 25.6
Sg eE 21 43.0

KSP Δ = 203km
Pg eE 00 21 36.3
Sg eN 22 01.2

JUN 10
GIG: φ = 50.045°N, λ = 18.466°E
H = 13:03:18.0, M = 2.7

RAC Δ = 20km
Pg iZ 13 03 22.7 D
Sg eNE 03 26.1

OJC Δ = 97km
Pg eZ 13 03 34.6
Sg eE 03 47.2

NIE Δ = 150km
Pg eZ 13 03 44.1
Sg eE 04 03.9

KSP Δ = 178km
Pg eZ 13 03 46.6
Sg eZ 04 08.2

JUN 11
GIG: φ = 50.257°N, λ = 18.862°E
H = 04:40:40.5, M = 2.4

OJC Δ = 67km
Pg eZ 04 40 52.3
Sg eN 41 00.6

NIE Δ = 140km
Pg eZ 04 41 05.5
Sg eE 41 23.0

KSP Δ = 193km
Pg eZ 04 41 12.7
Sg eN 41 35.3

JUN 11

φ = 50.28°N, λ = 18.85°E
H = 09:14:59.2, M = 2.2

OJC	Δ = 68km			
	Pg	eZ	09	15 11.3
	Sg	eN		15 19.3
NIE	Δ = 142km			
	Pg	eZ	09	15 24.0
	Sg	eE		15 42.5
KSP	Δ = 192km			
	Pg	eZ	09	15 31.0
	Sg	eN		15 54.5

JUN 11

φ = 50.26°N, λ = 18.86°E
H = 10:02:14.3, M = 2.4

OJC	Δ = 67km			
	Pg	eZ	10	02 26.2
	Sg	eE		02 34.7
NIE	Δ = 140km			
	Pg	eZ	10	02 39.0
	Sg	eN		02 56.0
KSP	Δ = 193km			
	Pg	eZ	10	02 46.6
	Sg	eN		03 09.4

JUN 11

GIG: φ = 50.040°N, λ = 18.486°E
H = 10:39:00.9, M = 2.5

RAC	Δ = 21km			
	Pg	eZ	10	39 05.7
	Sg	eNE		39 09.4
OJC	Δ = 96km			
	Pg	eZ	10	39 17.2
	Sg	eN		39 29.9
NIE	Δ = 149km			
	Pg	eZ	10	39 27.0
	Sg	eNZ		39 45.0
KSP	Δ = 179km			
	Pg	eZ	10	39 30.0
	Sg	eN		39 51.1

JUN 14

GIG: φ = 50.259°N, λ = 18.862°E
H = 03:02:26.6, M = 2.2

OJC	Δ = 67km			
	Pg	eZ	03	02 38.4
	Sg	eE		02 47.1
NIE	Δ = 140km			
	Pg	eZ	03	02 50.7
	Sg	eN		03 08.9
KSP	Δ = 193km			
	Pn	eE	03	02 56.3
	Pg	eE		02 58.9
	Sn	eN		03 19.6
	Sg	eN		03 22.6

JUN 15

GIG: φ = 50.234°N, λ = 19.072°E
H = 15:56:56.3, M = 2.2

OJC	Δ = 52km			
	Pg	eZ	15	57 05.3
	Sg	eN		57 12.2
NIE	Δ = 128km			
	Pg	eZ	15	57 18.5
	Sg	eN		57 34.6
KSP	Δ = 208km			
	Pg	E	15	57 29.9
	Sg	eZ		57 55.8

JUN 15

GIG: φ = 50.172°N, λ = 19.297°E
H = 18:08:35.7, M = 2.4

OJC	Δ = 36km			
	Pg	eZ	18	08 42.2
	Sg	eN		08 46.9
NIE	Δ = 112km			
	Pg	eZ	18	08 54.6
	Sg	eN		09 09.8
KSP	Δ = 225km			
	Pg	eZ	18	09 12.6
	Sg	eN		09 39.5

JUN 16

φ = 50.21°N, λ = 18.85°E
H = 02:52:20.1, M = 2.1

OJC	Δ = 68km			
	Pg	eZ	02	52 32.2
	Sg	eE		52 40.7
NIE	Δ = 137km			
	Pg	eZ	02	52 43.9
	Sg	eE		53 00.4
KSP	Δ = 194km			
	Pg	eZ	02	52 52.4
	Sg	eE		53 16.3

JUN 17

GIG: φ = 50.259°N, λ = 18.860°E
H = 07:16:47.1, M = 2.4

OJC Δ = 67km
Pg eZ 07 16 58.8
Sg eE 17 07.3

NIE Δ = 141km
Pg eZ 07 17 11.4
Sg eE 17 28.8

KSP Δ = 193km
Pg eZ 07 17 19.1
Sg eN 17 42.0

JUN 17

φ = 50.17°N, λ = 19.29°E
H = 13:41:55.6, M = 2.4

OJC Δ = 36km
Pg eZ 13 42 02.2
Sg eE 42 06.9

NIE Δ = 112km
Pg eZ 13 42 14.6
Sg eE 42 29.8

KSP Δ = 225km
Pg eE 13 42 33.3
Sg eN 42 59.8

JUN 20

GIG: φ = 50.259°N, λ = 18.860°E
H = 04:22:43.4, M = 2.3

OJC Δ = 67km
Pg eZ 04 22 55.8
Sg eN 23 04.1

NIE Δ = 140km
Pg eZ 04 23 07.9
Sg eN 23 24.9

KSP Δ = 193km
Pg eZ 04 23 15.9
Sg eN 23 38.3

JUN 20

GIG: φ = 50.220°N, λ = 19.144°E
H = 16:04:05.7, M = 2.2

OJC Δ = 46km
Pg iZ 16 04 13.5 D
Sg eE 04 19.9

NIE Δ = 123km
Pg eZ 16 04 27.5
Sg eE 04 43.3

KSP Δ = 213km
Pg eZ 16 04 40.1
Sg eN 05 06.1

JUN 20

φ = 50.08°N, λ = 19.14°E
H = 16:06:53.1, M = 2.3

OJC Δ = 50km
Pg iZ 16 07 01.7 D
Sg eN 07 08.4

NIE Δ = 112km
Pg eZ 16 07 11.8
(Sg) eN 07 28.2

KSP Δ = 219km
Pg eZ 16 07 28.5
Sg eN 07 55.3

JUN 21

GIG: φ = 50.353°N, λ = 18.851°E
H = 02:08:26.9, M = 2.4

RAC Δ = 56km
Pg eZ 02 08 36.8
Sg eNE 08 44.4

OJC Δ = 69km
Pg eZ 02 08 39.7
Sg eN 08 49.2

NIE Δ = 148km
Pg eZ 02 08 51.7
Sg eN 09 10.5

KSP Δ = 189km
Pg eZ 02 08 57.9
Sg eN 09 21.8

JUN 22

GIG: φ = 50.280°N, λ = 18.836°E
H = 03:28:29.1, M = 2.4

RAC Δ = 51km
Pg eZ 03 28 38.6
Sg eNE 28 44.2

OJC Δ = 69km
Pg eZ 03 28 41.3
Sg eE 28 51.3

NIE Δ = 143km
Pg eZ 03 28 53.3
Sg eN 29 11.4

KSP Δ = 191km
Pg eZ 03 29 01.2
Sg eN 29 24.2

JUN 22
φ = 50.25°N, λ = 18.88°E
H = 03:50:32.9, M = 2.1

OJC Δ = 66km
Pg eZ 03 50 45.1
Sg eN 50 53.1

NIE Δ = 139km
Pg eZ 03 50 57.1
Sg eE 51 13.3

KSP Δ = 194km
Pg eZ 03 51 05.1
Sg eE 51 28.9

JUN 22
GIG: φ = 50.259°N, λ = 18.895°E
H = 07:17:57.5, M = 2.4

OJC Δ = 64km
Pg eZ 07 18 08.5
Sg eE 18 16.6

NIE Δ = 139km
Pg eZ 07 18 21.5
(Sg) eE 18 40.5

KSP Δ = 195km
Pg eZ 07 18 30.2
Sg eN 18 53.4

JUN 22
GIG: φ = 50.181°N, λ = 19.311°E
H = 09:05:40.1, M = 2.3

OJC Δ = 35km
Pg eZ 09 05 46.0
Sg eN 05 50.8

NIE Δ = 110km
Pg eZ 09 05 58.8
Sg eE 06 13.7

KSP Δ = 217km
Pg eE 09 06 17.2
Sg eN 06 43.8

JUN 22
GIG: φ = 50.074°N, λ = 19.122°E
H = 23:07:03.8, M = 2.3

OJC Δ = 50km
Pg eZ 23 07 12.1
Sg eN 07 18.7

NIE Δ = 112km
Pg eZ 23 07 22.6
Sg eE 07 38.5

JUN 23
GIG: φ = 50.280°N, λ = 18.836°E
H = 13:50:32.8, M = 2.3

OJC Δ = 69km
Pg eZ 13 50 44.4
Sg eE 50 54.1

NIE Δ = 143km
Pg eZ 13 50 57.3
Sg eE 51 16.0

KSP Δ = 184km
Pg eZ 13 51 04.3
Sg eN 51 26.7

JUN 23
φ = 50.27°N, λ = 18.87°E
H = 23:25:05.7, M = 2.1

OJC Δ = 66km
Pg eZ 23 25 17.5
Sg eN 25 25.9

NIE Δ = 140km
Pg eZ 23 25 29.8
Sg eEN 25 47.7

KSP Δ = 193km
Pg eZ 23 25 38.0
Sg eN 26 01.1

JUN 24
GIG: φ = 50.171°N, λ = 19.298°E
H = 00:12:34.6, M = 2.4

OJC Δ = 36km
Pg eZ 00 12 40.7
Sg eN 12 45.4

NIE Δ = 111km
Pg eZ 00 12 53.3
Sg eE 13 08.5

KSP Δ = 226km
Pg eE 00 13 11.6
Sg eN 13 38.8

JUN 24
φ = 50.27°N, λ = 18.87°E
H = 00:25:07.2, M = 2.1

OJC Δ = 67km
Pg eZ 00 25 19.1
Sg eNE 25 27.6

NIE Δ = 140km
Pg eZ 00 25 31.3
Sg eE 25 49.4

KSP Δ = 193km
Pg eZ 00 25 39.4
Sg eN 26 02.9

JUN 24
GIG: φ = 50.257°N, λ = 18.860°E
H = 07:17:03.7, M = 2.4

OJC Δ = 67km
Pg eZ 07 17 15.4
Sg eE 17 23.9

NIE Δ = 140km
Pg eZ 07 17 29.0
Sg eE 17 46.1

KSP Δ = 193km
Pg eZ 07 17 35.8
Sg eN 17 59.2

JUN 24
GIG: φ = 50.069°N, λ = 18.456°E
H = 08:41:20.7, M = 2.2

RAC Δ = 19km
Pg eZ 08 41 25.1
Sg eNE 41 28.6

OJC Δ = 97km
Pg eZ 08 41 37.5
Sg eE 41 49.4

NIE Δ = 152km
Pg eZ 08 41 47.3
Sg eN 42 06.5

KSP Δ = 176km
Pg eZ 08 41 51.5
Sn eE 42 09.4
Sg eE 42 11.7

JUN 24
GIG: φ = 50.280°N, λ = 18.835°E
H = 15:38:48.5, M = 2.1

OJC Δ = 68km
Pg eZ 15 39 00.7
(Sg) eE 39 08.0

NIE Δ = 143km
Pg eZ 15 39 13.4
Sg eE 39 32.5

KSP Δ = 191km
Pg eZ 15 39 20.5
Sg eN 39 42.9

JUN 24
GIG: φ = 50.204°N, λ = 19.122°E
H = 20:25:10.1, M = 2.4

OJC Δ = 49km
Pg eZ 20 25 18.6
Sg eE 25 24.7

NIE Δ = 122km
Pg eZ 20 25 31.0
Sg eN 25 47.5

KSP Δ = 212km
Pg eZ 20 25 45.4
Sn eN 26 10.0

JUN 24
GIG: φ = 50.245°N, λ = 18.982°E
H = 22:37:49.0, M = 2.3

OJC Δ = 58km
Pg eZ 22 37 59.6
Sg eN 38 07.7

NIE Δ = 132km
Pg eZ 22 38 12.5
Sg eE 38 28.8

KSP Δ = 202km
Pg eZ 22 38 23.1
Sg eN 38 47.3

JUN 27
φ = 50.26°N, λ = 18.89°E
H = 01:40:58.0, M = 2.3

OJC Δ = 64km
Pg eZ 01 41 10.0
Sg eN 41 18.2

NIE Δ = 139km
Pg eZ 01 41 22.5
Sg eE 41 40.1

KSP Δ = 195km
Pg eZ 01 41 31.1
Sg eN 41 54.1

JUN 27
GIG: φ = 50.258°N, λ = 18.860°E
H = 02:10:55.8, M = 2.2

OJC Δ = 67km
Pg eZ 02 11 08.2
Sg eN 11 16.8

NIE Δ = 140km
Pg eZ 02 11 20.8
Sg eN 11 38.2

KSP Δ = 193km
Pg eZ 02 11 28.7
Sg eN 11 51.1

JUN 27
GIG: φ = 50.241°N, λ = 18.922°E
H = 05:13:02.0, M = 2.4

OJC Δ = 62km
Pg eZ 05 13 12.8
Sg eN 13 21.0

NIE Δ = 136km
Pg eZ 05 13 25.5
Sg eN 13 42.2

KSP Δ = 198km
Pg eZ 05 13 34.8
Sg eN 13 58.2

JUN 27
GIG: φ = 50.279°N, λ = 18.835°E
H = 14:11:50.3, M = 2.3

OJC Δ = 69km
Pg eZ 14 12 02.8
Sg eE 12 12.2

NIE Δ = 143km
Pg eZ 14 12 15.2
Sg eN 12 32.8

KSP Δ = 190km
Pg eZ 14 12 22.3
Sg eN 12 44.9

JUN 28
GIG: φ = 50.171°N, λ = 19.298°E
H = 02:13:33.3, M = 2.2

OJC Δ = 35km
Pg eZ 02 13 39.5
Sg eN 13 44.1

NIE Δ = 111km
Pg eZ 02 13 52.0
Sg eN 14 07.3

KSP Δ = 226km
Pg eE 02 14 12.4
Sn eN 14 37.0

JUN 28
GIG: φ = 50.100°N, λ = 19.209°E
H = 12:35:39.8, M = 2.9

OJC Δ = 45km
Pg eZ 12 35 47.5
Sg iN 35 53.5

RAC Δ = 72km
Pg eZ 12 35 52.2
Sg eE 36 01.6

NIE Δ = 110km
Pg eZ 12 35 58.6
(Sg) eN 36 14.2

KSP Δ = 222km
Pn Z 12 36 15.4
Pg eZ 36 17.2
Sg eN 36 42.7

KWP Δ = 255km
Pg eZ 12 36 26.6
Sg eNE 36 56.6

JUN 28
GIG: φ = 50.257°N, λ = 18.862°E
H = 15:10:04.2, M = 2.2

OJC Δ = 67km
Pg eZ 15 10 16.0
Sg eE 10 24.1

NIE Δ = 140km
Pg eZ 15 10 28.3
Sg eN 10 45.7

KSP Δ = 193km
Pg eE 15 10 35.9
Sg eN 10 59.0

JUN 28
GIG: φ = 50.279°N, λ = 18.837°E
H = 15:49:00.7, M = 2.1

OJC Δ = 69km
Pg eZ 15 49 13.0
Sg eEN 49 21.7

NIE Δ = 143km
Pg eZ 15 49 25.6
Sg eN 49 43.8

KSP Δ = 190km
Pn eN 15 49 31.4
Pg eZ 49 32.8
Sg eN 49 55.4

JUN 28

φ = 50.32°N, λ = 18.88°E
H = 18:30:46.8, M = 2.2

OJC Δ = 66km
Pg eZ 18 30 58.3
Sg eE 31 06.9

NIE Δ = 144km
Pg eZ 18 31 11.4
Sg eE 31 29.0

KSP Δ = 192km
Pg eZ 18 31 18.7
Sg eN 31 41.9

JUN 28
GIG: **φ = 50.236°N, λ = 19.040°E**
H = 22:48:50.2, M = 2.2

OJC Δ = 54km
Pg eZ 22 48 59.8
Sg eN 49 06.8

NIE Δ = 130km
Pg eZ 22 49 12.6
Sg eN 49 29.3

KSP Δ = 206km
Pg eE 22 49 23.2
Sg eN 49 49.0

JUN 29
GIG: **φ = 50.099°N, λ = 19.209°E**
H = 16:48:18.1, M = 2.2

OJC Δ = 44km
Pg eZ 16 48 25.9
Sg eN 48 31.7

NIE Δ = 110km
Pg eZ 16 48 36.9
Sg eE 48 52.3

KSP Δ = 222km
Pg eE 16 48 54.3
Sn eN 49 19.7

JUL 1
GIG: **φ = 50.364°N, λ = 18.911°E**
H = 06:28:08.3, M = 2.3

OJC Δ = 65km
Pg eZ 06 28 19.9
Sg eE 28 28.4

NIE Δ = 146km
Pg eZ 06 28 34.3
Sg eE 28 51.8

KSP Δ = 193km
Pg eE 06 28 41.4
Sg eZ 29 04.0

JUL 1
GIG: **φ = 50.099°N, λ = 19.207°E**
H = 17:19:03.2, M = 2.3

OJC Δ = 45km
Pg eZ 17 19 11.4
Sg eN 19 17.3

NIE Δ = 111km
Pg eZ 17 19 22.7
(Sg) eN 19 37.9

KSP Δ = 222km
Pg eZ 17 19 38.8
Sg eN 20 05.7

JUL 1
GIG: **φ = 50.103°N, λ = 19.170°E**
H = 20:19:15.7, M = 2.2

OJC Δ = 46km
Pg eZ 20 19 23.2
Sg eN 19 29.6

NIE Δ = 112km
Pg eZ 20 19 34.3
Sg eN 19 49.6

KSP Δ = 220km
Pg eE 20 19 52.7
Sn eE 20 16.7

JUL 2
GIG: **φ = 50.075°N, λ = 19.125°E**
H = 01:39:13.4, M = 2.3

OJC Δ = 51km
Pg eZ 01 39 22.4
Sg eN 39 28.7

RAC Δ = 66km
Pg eZ 01 39 24.8
Sg eNE 39 33.3

NIE Δ = 112km
Pg eZ 01 39 32.9

KSP Δ = 218km
Pn eZ 01 39 47.2
Pg eZ 39 49.9
Sg eN 40 15.0

JUL 2

GIG: φ = 50.244°N, λ = 18.988°E
H = 14:09:28.3, M = 2.4

OJC Δ = 58km
Pg eZ 14 09 38.4
Sg eN 09 46.5

NIE Δ = 133km
Pg eZ 14 09 51.8
(Sg) eN 10 09.7

KSP Δ = 202km
Pg eZ 14 10 01.9
Sn eN 10 25.4

JUL 3

GIG: φ = 50.259°N, λ = 18.859°E
H = 08:22:16.5, M = 2.5

RAC Δ = 52km
Pg eZ 08 22 26.3
Sg eN 22 33.3

OJC Δ = 67km
Pg eZ 08 22 28.3
Sg eN 22 36.7

NIE Δ = 140km
Pg eZ 08 22 40.6
Sg eN 22 58.2

KSP Δ = 193km
Pg eZ 08 22 48.8
Sg eN 23 11.1

JUL 3

GIG: φ = 50.275°N, λ = 18.890°E
H = 11:42:17.1, M = 2.2

OJC Δ = 65km
Pg eZ 11 42 28.5
Sg eN 42 36.9

NIE Δ = 140km
Pg eZ 11 42 41.9
Sg eE 42 59.5

KSP Δ = 194km
Pg eZ 11 42 48.6
Sg eN 43 11.8

JUL 4

GIG: φ = 50.235°N, λ = 18.931°E
H = 16:04:03.3, M = 2.3

OJC Δ = 62km
Pg eZ 16 04 14.2
Sg eE 04 22.2

NIE Δ = 135km
Pg eZ 16 04 26.7
Sg eE 04 44.1

KSP Δ = 198km
Pg eZ 16 04 36.3
Sg eN 04 59.3

JUL 4

GIG: φ = 50.099°N, λ = 19.204°E
H = 20:59:24.7, M = 2.3

OJC Δ = 44km
Pg eZ 20 59 32.3
Sg eN 59 38.2

NIE Δ = 110km
Pg eZ 20 59 43.5
Sg eE 59 58.0

KSP Δ = 223km
Pg eZ 21 00 02.4
Sg eN 00 27.9

JUL 4

GIG: φ = 50.041°N, λ = 18.465°E
H = 22:06:53.1, M = 2.2

RAC Δ = 20km
Pg eZ 22 06 57.6
Sg eNE 07 01.2

OJC Δ = 97km
Pg eZ 22 07 09.7
Sg eE 07 22.1

NIE Δ = 150km
Pg eZ 22 07 18.7
Sg eN 07 37.8

KSP Δ = 178km
Pg eZ 22 07 22.2
Sg eN 07 43.9

JUL 5

GIG: φ = 50.280°N, λ = 18.835°E
H = 03:32:17.2, M = 2.2

OJC Δ = 69km
Pg eZ 03 32 30.1
Sg eE 32 38.0

NIE Δ = 142km
Pg eZ 03 32 42.5
(Sg) eE 32 59.1

KSP Δ = 191km
Pg eZ 03 32 49.5
Sg eE 33 12.8

JUL 5

GIG: φ = 50.058°N, λ = 18.450°E
H = 06:11:28.7, M = 2.2

RAC	Δ = 18km		
	Pg eZ	06 11 33.1	
	Sg eNE	11 36.7	
OJC	Δ = 98km		
	Pg eZ	06 11 45.6	
	Sg eE	11 57.2	
NIE	Δ = 152km		
	Pg eZ	06 11 55.5	
	Sg eN	12 15.3	
KSP	Δ = 176km		
	Pg eZ	06 11 57.3	
	Sg eN	12 18.5	

JUL 6

GIG: φ = 50.264°N, λ = 18.912°E
H = 01:00:21.1, M = 2.9

RAC	Δ = 55km		
	Pg iZ	01 00 31.3	D
	Sg eNE	00 38.5	
OJC	Δ = 64km		
	Pg iZ	01 00 32.4	D
	Sg eE	00 40.1	
NIE	Δ = 138km		
	Pg eZ	01 00 44.4	
	Sg eE	01 02.1	
KSP	Δ = 196km		
	Pn eZ	01 00 51.5	
	Pg iZ	00 53.9	
	Sg eN	01 17.2	
KWP	Δ = 280km		
	Pn eZ	01 01 02.8	
	Pg eZ	01 11.3	
	Sn eNE	01 35.7	
	Sg eNE	01 47.4	

JUL 8

GIG: φ = 50.215°N, λ = 18.729°E
H = 21:10:57.2, M = 3.1

RAC	Δ = 41km		
	Pg eZ	21 11 05.0	
	Sg eNE	11 10.6	
OJC	Δ = 76km		
	Pg eZ	21 11 10.4	
	Sg eN	11 20.1	
NIE	Δ = 145km		
	Pg eZ	21 11 21.5	
	Sg eE	11 39.9	
KSP	Δ = 186km		
	Pn eZ	21 11 26.3	
	Pg iZ	11 28.3	
	Sn eN	11 49.2	
KWP	Δ = 292km		
	Pn eZ	21 11 42.6	
	Pg eZ	11 49.8	
	Sn eNE	12 20.4	
	Sg eNE	12 29.1	
SUW	Δ = 520km		
	Pn eZ	21 12 09.4	
	Pg eZ	12 26.6	
	Sn eNE	13 09.3	
	Sg eNE	13 33.8	

JUL 9

GIG: φ = 50.257°N, λ = 18.862°E
H = 02:32:29.4, M = 2.2

RAC	Δ = 51km		
	Pg eZ	02 32 39.3	
	Sg eNE	32 45.4	
OJC	Δ = 67km		
	Pg eZ	02 32 41.4	
	Sg eE	32 49.8	
NIE	Δ = 140km		
	Pg eZ	02 32 53.6	
	Sg eE	33 11.5	
KSP	Δ = 193km		
	Pg eZ	02 33 01.9	
	Sg eN	33 25.0	

JUL 9

GIG: φ = 50.206°N, λ = 19.071°E
H = 04:17:11.6, M = 2.4

OJC	Δ = 52km		
	Pg eZ	04 17 20.8	
	Sg eN	17 27.7	
RAC	Δ = 64km		
	Pg eZ	04 17 23.5	
	(Sg) eNE	17 30.1	
NIE	Δ = 125km		
	Pg eZ	04 17 33.5	
	Sg eE	17 49.8	

KSP Δ = 209km
Pn eZ 04 17 44.0
Pg eZ 17 46.2
Sg eN 18 11.0

JUL 10
GIG: φ = 50.259°N, λ = 18.860°E
H = 02:59:54.9, M = 2.4

RAC Δ = 52km
Pg eZ 03 00 04.4
Sg eNE 00 11.7

OJC Δ = 67km
Pg eZ 03 00 06.6
Sg eE 00 15.1

NIE Δ = 141km
Pg eZ 03 00 18.8
Sg eN 00 36.4

KSP Δ = 193km
Pn eZ 03 00 24.6
Pg Z 00 27.0
Sg eE 00 49.8

JUL 11
φ = 50.38°N, λ = 18.84°E
H = 16:00:02.7, M = 2.2

OJC Δ = 71km
Pg eZ 16 00 15.4
Sg eE 00 23.4

NIE Δ = 150km
Pg eZ 16 00 28.0
Sg eN 00 47.6

KSP Δ = 187km
Pg eZ 16 00 33.3
Sg eE 00 57.0

JUL 12
φ = 50.28°N, λ = 18.84°E
H = 05:26:10.6, M = 2.1

OJC Δ = 69km
Pg eZ 05 26 23.4
Sg eN 26 31.3

NIE Δ = 142km
Pg eZ 05 26 35.0
Sg eE 26 52.1

KSP Δ = 191km
Pg eZ 05 26 42.9
Sg eZ 27 04.5

JUL 12
GIG: φ = 50.169°N, λ = 19.300°E
H = 11:42:49.0, M = 2.2

OJC Δ = 35km
Pg eZ 11 42 54.7
Sg eN 42 59.5

NIE Δ = 111km
Pg eZ 11 43 08.4
Sg eN 43 23.3

KSP Δ = 226km
Pg eE 11 43 27.2
Sn eZ 43 52.0

JUL 12
GIG: φ = 50.257°N, λ = 18.860°E
H = 15:37:14.5, M = 2.3

OJC Δ = 67km
Pg eZ 15 37 26.5
Sg eE 37 34.7

NIE Δ = 141km
Pg eZ 15 37 38.5
Sg eN 37 56.1

KSP Δ = 193km
Pg eZ 15 37 46.7
Sg eE 38 09.0

JUL 13
GIG: φ = 50.099°N, λ = 19.207°E
H = 15:16:30.6, M = 2.2

OJC Δ = 45km
Pg eZ 15 16 38.6
Sg eN 16 44.3

NIE Δ = 110km
Pg eZ 15 16 49.7
Sg eE 17 04.2

KSP Δ = 222km
Pg eEZ 15 17 06.9
Sn eEN 17 32.2

JUL 14
GIG: φ = 50.368°N, λ = 18.908°E
H = 13:59:31.9, M = 2.5

OJC Δ = 66km
Pg eZ 13 59 43.4
Sg eN 59 52.2

KSP Δ = 192km
Pg eZ 14 00 04.6
Sg eN 00 27.2

JUL 16

GIG: φ = 50.259°N, λ = 18.860°E
H = 13:32:57.5, M = 2.6

OJC Δ = 67km
Pg eZ 13 33 09.2
Sg eN 33 17.9

NIE Δ = 141km
Pg eZ 13 33 21.9
Sg eE 33 39.9

KSP Δ = 193km
Pg iZ 13 33 30.0
Sg eN 33 52.5

JUL 16

φ = 50.23°N, λ = 19.10°E
H = 15:46:01.8, M = 2.3

OJC Δ = 50km
Pg eZ 15 46 10.5
Sg eN 46 17.4

NIE Δ = 126km
Pg eZ 15 46 23.4
Sg eE 46 39.1

KSP Δ = 210km
Pg eZ 15 46 36.0
Sg eN 47 01.7

JUL 18

GIG: φ = 50.257°N, λ = 18.862°E
H = 15:34:44.6, M = 2.2

OJC Δ = 66km
Pg eZ 15 34 55.9
Sg eE 35 04.4

NIE Δ = 140km
Pg eZ 15 35 09.0
Sg eE 35 26.6

KSP Δ = 193km
Pg eZ 15 35 16.6
Sg eZ 35 39.5

JUL 20

GIG: φ = 50.258°N, λ = 18.859°E
H = 13:24:25.0, M = 2.3

OJC Δ = 67km
Pg eZ 13 24 37.5
Sg eE 24 45.5

NIE Δ = 140km
Pg eZ 13 24 49.5
Sg eN 25 06.9

KSP Δ = 193km
Pg eZ 13 24 57.4
Sg eN 25 19.9

JUL 21

φ = 50.26°N, λ = 18.82°E
H = 15:50:06.2, M = 2.2

OJC Δ = 70km
Pg eZ 15 50 18.9
Sg eEN 50 26.8

NIE Δ = 143km
Pg eZ 15 50 31.0
Sg eE 50 48.7

KSP Δ = 190km
Pg eZ 15 50 37.9
Sg eN 51 01.0

JUL 22

GIG: φ = 50.231°N, λ = 19.075°E
H = 10:08:03.2, M = 2.6

OJC Δ = 51km
Pg iZ 10 08 12.2 D
Sg eN 08 19.0

NIE Δ = 127km
Pg eZ 10 08 25.4
Sg eE 08 41.6

KSP Δ = 209km
Pg eZ 10 08 38.1
Sg eN 09 02.5

JUL 22

GIG: φ = 50.212°N, λ = 19.064°E
H = 17:05:40.7, M = 2.2

OJC Δ = 52km
Pg eZ 17 05 49.6
Sg eN 05 56.3

NIE Δ = 126km
Pg eZ 17 06 03.2
Sg eN 06 19.2

KSP Δ = 208km
Pg eZ 17 06 14.1
Sg eZ 06 38.7

JUL 23

φ = 50.08°N, λ = 18.44°E
H = 02:08:48.7, M = 1.8

RAC Δ = 18km
Pg eZ 02 08 52.8
Sg eNE 08 55.5

OJC Δ = 98km
Pg eZ 02 09 05.5
Sg eE 09 18.2

NIE Δ = 154km
Pg eZ 02 09 14.6
Sg eN 09 34.8

JUL 23

φ = 50.25°N, λ = 18.80°E
H = 04:39:47.5, M = 2.0

OJC Δ = 71km
Pg eZ 04 40 00.0
Sg eN 40 08.9

NIE Δ = 143km
Pg eZ 04 40 12.3
Sg eE 40 29.7

KSP Δ = 189km
Pg eZ 04 40 19.6
Sg eN 40 41.3

JUL 25

φ = 50.25°N, λ = 18.85°E
H = 19:27:33.9, M = 2.4

OJC Δ = 68km
Pg iZ 19 27 45.8
Sg iE 27 54.2

NIE Δ = 140km
Pg eZ 19 27 57.8
Sg eE 28 16.1

KSP Δ = 192km
Pg eZ 19 28 06.2
Sg eN 28 28.8

JUL 27

GIG: φ = 50.258°N, λ = 18.858°E
H = 02:48:33.7, M = 2.4

RAC Δ = 52km
Pg eZ 02 48 43.1
Sg eNE 48 50.4

OJC Δ = 67km
Pg eZ 02 48 45.4
Sg eE 48 53.9

NIE Δ = 141km
Pg eZ 02 48 57.6
Sg eN 49 15.1

KSP Δ = 193km
Pg eZ 02 49 05.7
Sg eN 49 28.6

JUL 27

GIG: φ = 50.258°N, λ = 18.860°E
H = 03:23:42.7, M = 2.3

OJC Δ = 67km
Pg eZ 03 23 54.2
Sg eN 24 02.7

NIE Δ = 140km
Pg eZ 03 24 06.6
Sg eN 24 23.9

KSP Δ = 193km
Pg eZ 03 24 14.9
Sg eN 24 37.6

JUL 28

GIG: φ = 50.106°N, λ = 19.171°E
H = 14:42:39.1, M = 2.5

OJC Δ = 46km
Pg eZ 14 42 46.8
Sg eN 42 53.0

NIE Δ = 112km
Pg eZ 14 42 58.0
Sg eE 43 13.7

KSP Δ = 220km
Pg eE 14 43 16.3
Sn eN 43 40.7

JUL 29

GIG: φ = 50.205°N, λ = 19.071°E
H = 03:28:45.5, M = 2.3

OJC Δ = 52km
Pg eZ 03 28 54.1
Sg eE 29 01.0

NIE Δ = 125km
Pg eZ 03 29 06.7
Sg eNE 29 23.0

KSP Δ = 209km
Pg eZ 03 29 19.5
Sg eN 29 44.3

JUL 29

GIG: φ = 50.349°N, λ = 18.963°E
H = 15:22:30.9, M = 2.5

OJC Δ = 61km
Pg eZ 15 22 41.4
Sg eE 22 49.4

NIE Δ = 142km
Pg eZ 15 22 55.7
Sg eN 23 13.4

KSP Δ = 196km
Pg eZ 15 23 03.6
Sg eE 23 27.4

JUL 29

φ = 50.28°N, λ = 18.87°E
H = 19:27:21.1, M = 2.2

OJC Δ = 67km
Pg eZ 19 27 33.2
Sg eE 27 41.0

NIE Δ = 141km
Pg eZ 19 27 44.7
Sg eN 28 03.0

KSP Δ = 192km
Pg eZ 19 27 51.9
Sg eN 28 15.3

AUG 3
GIG: φ = 50.259°N, λ = 18.882°E
H = 21:37:32.9, M = 2.4

RAC Δ = 52km
Pg eZ 21 37 42.7
Sg eNE 37 49.7

OJC Δ = 66km
Pg eZ 21 37 44.4
Sg iE 37 52.9

NIE Δ = 139km
Pg eZ 21 37 56.5
Sg eN 38 14.0

KSP Δ = 194km
Pn eZ 21 38 03.6
Pg eE 38 05.3
Sg eN 38 28.2

AUG 4
GIG: φ = 50.273°N, λ = 18.829°E
H = 03:06:29.2, M = 2.4

OJC Δ = 69km
Pg eZ 03 06 41.2
Sg eE 06 50.5

NIE Δ = 143km
Pg eZ 03 06 53.6
Sg eE 07 11.6

KSP Δ = 190km
Pg eZ 03 07 00.8
Sg eE 07 23.1

AUG 5
GIG: φ = 50.368°N, λ = 18.907°E
H = 06:34:42.9, M = 2.5

OJC Δ = 66km
Pg eZ 06 34 54.4
Sg eN 35 03.2

NIE Δ = 147km
Pg eZ 06 35 08.4
Sg eE 35 26.5

KSP Δ = 192km
Pg eZ 06 35 14.2
Sg eN 35 37.9

AUG 5

φ = 50.36°N, λ = 18.90°E
H = 16:10:35.9, M = 2.3

OJC Δ = 66km
Pg eZ 16 10 47.5
Sg eE 10 56.0

NIE Δ = 146km
Pg eZ 16 11 01.4
Sg eN 11 18.8

KSP Δ = 192km
Pg eE 16 11 08.3
Sg eN 11 31.3

AUG 6
GIG: φ = 50.240°N, λ = 18.923°E
H = 06:07:59.6, M = 2.3

OJC Δ = 62km
Pg eZ 06 08 10.5
Sg eNE 08 18.8

NIE Δ = 136km
Pg eZ 06 08 23.0
Sg eE 08 40.7

KSP Δ = 198km
Pg eE 06 08 32.6
Sg eN 08 56.0

AUG 6
GIG: φ = 50.261°N, λ = 18.891°E
H = 13:23:08.2, M = 2.2

OJC Δ = 65km
Pg eZ 13 23 19.6
Sg eE 23 28.0

NIE Δ = 139km
Pg eZ 13 23 32.9
Sg eE 23 50.3

KSP Δ = 195km
Pg eE 13 23 40.4
Sg eN 24 03.2

AUG 6
GIG: φ = 50.259°N, λ = 18.858°E
H = 13:31:28.8, M = 2.7

RAC Δ = 52km
Pg eZ 13 31 38.4
Sg eNE 31 45.6

OJC Δ = 67km
Pg eZ 13 31 40.5
Sg eEN 31 49.0

NIE Δ = 141km
Pg eZ 13 31 52.6
Sg eN 32 10.3

KSP Δ = 193km
Pg eZ 13 32 01.0
Sg eE 32 23.3

KWP Δ = 284km
Pg eZ 13 32 19.2
Sg eNE 32 59.0

AUG 6
GIG: φ = 50.274°N, λ = 18.830°E
H = 19:49:55.7, M = 2.2

OJC Δ = 70km
Pg iZ 19 50 08.5 C
Sg eE 50 16.6

NIE Δ = 143km
Pg eZ 19 50 20.6
Sg eE 50 39.5

KSP Δ = 190km
Pg eZ 19 50 27.3
Sg eE 50 50.1

AUG 10
GIG: φ = 50.043°N, λ = 18.462°E
H = 05:18:37.0, M = 2.2

RAC Δ = 20km
Pg eZ 05 18 41.3
Sg eNE 18 44.8

OJC Δ = 97km
Pg eZ 05 18 53.3
Sg eE 19 05.7

NIE Δ = 150km
Pg eZ 05 19 03.3
Sg eE 19 22.7

AUG 12
GIG: φ = 50.256°N, λ = 18.862°E
H = 15:43:19.6, M = 2.3

OJC Δ = 67km
Pg eZ 15 43 31.5
Sg eE 43 39.9

NIE Δ = 140km
Pg eZ 15 43 43.7
Sg eE 44 01.9

KSP Δ = 193km
Pg eZ 15 43 51.8
Sg eN 44 14.5

AUG 16
GIG: φ = 50.257°N, λ = 18.862°E
H = 07:18:41.4, M = 2.3

OJC Δ = 67km
Pg eZ 07 18 53.1
Sg eE 19 01.7

NIE Δ = 140km
Pg eZ 07 19 05.4
Sg eE 19 23.6

KSP Δ = 193km
Pg eZ 07 19 13.6
Sg eN 19 36.2

AUG 16
GIG: φ = 50.363°N, λ = 18.909°E
H = 13:29:15.5, M = 2.4

OJC Δ = 65km
Pg eZ 13 29 26.8
Sg N 29 35.7

KSP Δ = 193km
Pg eZ 13 29 47.6
Sn eE 30 08.3
Sg eE 30 11.5

AUG 16
GIG: φ = 50.257°N, λ = 18.862°E
H = 13:36:44.3, M = 2.4

OJC Δ = 67km
Pg eZ 13 36 55.9
Sg eE 37 04.6

KSP Δ = 193km
Pg eZ 13 37 16.6
Sg eE 37 38.9

AUG 18
GIG: φ = 50.041°N, λ = 18.462°E
H = 06:32:01.4, M = 2.4

RAC Δ = 20km
Pg eZ 06 32 05.7
Sg eNE 32 09.5

OJC Δ = 97km
Pg eZ 06 32 17.7
Sg eN 32 30.6

KSP Δ = 178km
Pg eZ 06 32 31.8
Sg eE 32 51.8

AUG 18
GIG: φ = 50.071°N, λ = 18.458°E
H = 23:36:57.3, M = 2.5

RAC Δ = 19km
Pg iZ 23 37 01.7 D
Sg eNE 37 04.8

OJC Δ = 97km
Pg eZ 23 37 13.9
Sg eE 37 26.0

KSP Δ = 176km
Pn eZ 23 37 25.6
(Pg) eZ 37 28.4
Sg eN 37 47.9

AUG 19
GIG: φ = 50.257°N, λ = 18.862°E
H = 21:15:32.5, M = 2.5

RAC Δ = 51km
Pg eZ 21 15 42.2
Sg eNE 15 49.2

OJC Δ = 67km
Pg eZ 21 15 44.1
Sg eN 15 52.7

KSP Δ = 193km
Pg iZ 21 16 04.8 D
Sg eN 16 27.4

AUG 20
GIG: φ = 50.208°N, λ = 19.073°E
H = 04:13:21.9, M = 2.4

OJC Δ = 52km
Pg eZ 04 13 30.8
Sg eE 13 37.9

KSP Δ = 209km
Pg eZ 04 13 56.3
Sg eN 14 20.8

AUG 22
GIG: φ = 50.257°N, λ = 18.875°E
H = 00:03:10.3, M = 2.5

RAC Δ = 53km
Pg eZ 00 03 19.8
Sg eNE 03 27.1

OJC Δ = 66km
Pg eZ 00 03 21.9
Sg eE 03 30.4

NIE Δ = 140km
Pg eZ 00 03 34.1
Sg eN 03 52.2

KSP Δ = 194km
Pg eZ 00 03 42.5
Sg eN 04 05.1

AUG 22
GIG: φ = 50.364°N, λ = 18.911°E
H = 00:55:15.7, M = 2.5

RAC Δ = 60km
Pg eZ 00 55 27.0
Sg eNE 55 34.8

OJC Δ = 65km
Pg eZ 00 55 27.4
Sg eE 55 35.4

NIE Δ = 146km
Pg eZ 00 55 40.5
Sg eE 55 58.3

KSP Δ = 192km
Pn eZ 00 55 45.4
Pg eZ 55 47.8
Sg eN 56 11.5

AUG 23

GIG: φ = 50.064°N, λ = 18.449°E
H = 01:47:18.1, M = 2.0

RAC Δ = 18km
Pg eZ 01 47 22.3
Sg eNE 47 25.4

OJC Δ = 98km
Pg eZ 01 47 35.0
Sg eN 47 47.2

NIE Δ = 152km
Pg eZ 01 47 44.8
Sg eN 48 02.8

AUG 25

GIG: φ = 50.262°N, λ = 18.898°E
H = 01:34:52.3, M = 2.3

OJC Δ = 64km
Pg eZ 01 35 03.3
Sg eN 35 12.2

NIE Δ = 139km
Pg eZ 01 35 15.8
Sg eE 35 33.5

KSP Δ = 195km
Pg eZ 01 35 24.7
Sg eN 35 47.5

AUG 25

GIG: φ = 50.255°N, λ = 18.862°E
H = 12:17:23.9, M = 2.4

OJC Δ = 67km
Pg eZ 12 17 35.7
Sg eE 17 44.3

NIE Δ = 140km
Pg eZ 12 17 48.2
Sg eE 18 05.8

KSP Δ = 193km
Pg eZ 12 17 56.0
Sg eN 18 18.1

AUG 26

GIG: φ = 50.213°N, λ = 19.062°E
H = 16:09:41.4, M = 2.4

OJC Δ = 52km
Pg eZ 16 09 50.3
Sg eN 09 57.0

NIE Δ = 126km
Pg eZ 16 10 03.3
Sg eE 10 19.0

AUG 26

GIG: φ = 50.231°N, λ = 19.040°E
H = 16:12:28.5, M = 2.2

OJC Δ = 54km
Pg eZ 16 12 37.7
Sg eE 12 44.9

NIE Δ = 129km
Pg eZ 16 12 51.1
Sg eN 13 08.0

KSP Δ = 206km
Pg eZ 16 13 02.1
Sg eN 13 26.5

AUG 27

GIG: φ = 50.043°N, λ = 18.462°E
H = 17:48:49.5, M = 2.2

RAC Δ = 20km
Pg eZ 17 48 53.9
Sg eNE 48 57.3

OJC Δ = 97km
Pg eZ 17 49 06.0
Sg eN 49 18.4

NIE Δ = 150km
Pg eZ 17 49 15.5
Sg eE 49 34.7

KSP Δ = 178km
Pg eZ 17 49 18.5
Sg eE 49 39.7

AUG 28

GIG: φ = 50.065°N, λ = 18.445°E
H = 00:21:11.9, M = 2.2

RAC Δ = 18km
Pg eZ 00 21 16.0
Sg eNE 21 19.3

OJC Δ = 98km
Pg eZ 00 21 28.7
Sg eN 21 40.7

NIE Δ = 152km
Pg eZ 00 21 38.2
Sg eN 21 57.1

AUG 29

GIG: φ = 50.204°N, λ = 19.073°E
H = 13:31:05.6, M = 2.3

OJC Δ = 51km
Pg eZ 13 31 14.3
Sg eN 31 21.2

NIE Δ = 125km
Pg eZ 13 31 27.2
Sg eE 31 43.6

AUG 31
GIG: φ = 50.038°N, λ = 18.462°E
H = 03:44:33.6, M = 2.1

RAC Δ = 20km
Pg eZ 03 44 38.0
Sg eNE 44 41.4

OJC Δ = 98km
Pg eZ 03 44 50.5
Sg eNE 45 02.8

NIE Δ = 150km
Pg eZ 03 44 59.5
Sg eE 45 18.3

AUG 31
GIG: φ = 50.243°N, λ = 18.767°E
H = 10:49:54.0, M = 2.5

OJC Δ = 73km
Pg eZ 10 50 07.2
Sg eE 50 15.7

NIE Δ = 144km
Pg eZ 10 50 18.5
Sg eE 50 36.8

KSP Δ = 187km
Pg eZ 10 50 24.9
Sg eN 50 47.0

SEP 1
GIG: φ = 50.106°N, λ = 19.171°E
H = 04:35:38.0, M = 2.6

OJC Δ = 46km
Pg eZ 04 35 46.0
Sg eNE 35 52.1

NIE Δ = 113km
Pg eZ 04 35 57.1
Sg eN 36 11.3

KSP Δ = 220km
Pg eE 04 36 13.5
Sn eN 36 39.2

SEP 1
GIG: φ = 50.260°N, λ = 18.881°E
H = 15:34:31.7, M = 2.4

OJC Δ = 65km
Pg eZ 15 34 43.1
Sg eE 34 51.6

NIE Δ = 139km
Pg eZ 15 34 55.4
Sg eN 35 12.8

KSP Δ = 194km
Pg eZ 15 35 04.0
Sg eE 35 27.0

SEP 2
φ = 50.09°N, λ = 18.47°E
H = 01:38:52.2, M = 2.1

RAC Δ = 20km
Pg iZ 01 38 56.9 C
Sg eNE 38 59.9

OJC Δ = 96km
Pg eZ 01 39 08.8
Sg eN 39 20.9

NIE Δ = 152km
Pg eZ 01 39 18.4
Sg eN 39 37.8

KSP Δ = 176km
Pg eE 01 39 21.1
Sg eN 39 42.7

SEP 2
GIG: φ = 50.213°N, λ = 19.063°E
H = 15:51:22.8, M = 2.3

OJC Δ = 53km
Pg eZ 15 51 31.8
Sg eEN 51 39.0

NIE Δ = 127km
Pg eZ 15 51 45.3
(Sg) eE 52 02.2

KSP Δ = 208km
Pg eE 15 51 56.9
Sn eZ 52 20.8

SEP 3
GIG: φ = 50.208°N, λ = 19.073°E
H = 08:07:02.5, M = 2.4

OJC Δ = 52km
Pg eZ 08 07 11.8
Sg eN 07 18.5

KSP Δ = 209km
Pg eE 08 07 37.1
Sg eN 08 01.3

SEP 6

GIG: φ = 50.363°N, λ = 18.867°E
H = 12:19:14.6, M = 2.4

OJC	Δ = 69km		
	Pg eZ	12	19 27.1
	Sg eE		19 35.8
KSP	Δ = 189km		
	Pg eE	12	19 45.4
	Sg eN		20 09.3

SEP 7

GIG: φ = 50.238°N, λ = 19.069°E
H = 02:53:45.7, M = 2.3

OJC	Δ = 52km		
	Pg eZ	02	53 54.8
	Sg eN		54 02.0
KSP	Δ = 207km		
	(Pn) eE	02	54 17.3
	Pg eE		54 19.8
	Sg eN		54 44.2

SEP 7

GIG: φ = 50.364°N, λ = 18.867°E
H = 16:20:16.9, M = 2.5

OJC	Δ = 68km		
	Pg eZ	16	20 28.8
	Sg eEN		20 37.9
NIE	Δ = 148km		
	Pg eZ	16	20 42.9
	Sg eN		21 01.2
KSP	Δ = 190km		
	Pg eZ	16	20 48.4
	Sg eN		21 11.8

SEP 8

GIG: φ = 50.257°N, λ = 18.862°E
H = 02:09:15.3, M = 2.8

RAC	Δ = 52km		
	Pg eZ	02	09 24.7
	Sg eNE		09 31.8
OJC	Δ = 67km		
	Pg eZ	02	09 26.8
	Sg eE		09 35.5
NIE	Δ = 140km		
	Pg eZ	02	09 39.1
	Sg eE		09 57.4
KSP	Δ = 193km		
	Pn eZ	02	09 45.8
	Pg iZ		09 47.5
	Sg eE		10 09.8
KWP	Δ = 284km		
	Pn eZ	02	09 56.4
	Pg eZ		10 03.3
	Sg eNE		10 39.7
GKP	Δ = 354km		
	Pn eZ	02	10 06.6
	Pg eZ		10 16.7
	Sg eNE		10 59.0

SEP 8

GIG: φ = 50.211°N, λ = 19.064°E
H = 18:16:56.6, M = 2.4

OJC	Δ = 52km		
	Pg eZ	18	17 06.8
	Sg eN		17 12.3
NIE	Δ = 125km		
	Pg eZ	18	17 18.3
	Sg eN		17 33.0
KSP	Δ = 209km		
	Pg eZ	18	17 31.0
	Sg eZ		17 55.1

SEP 8

φ = 50.24°N, λ = 18.67°E
H = 21:08:21.1, M = 2.4

RAC	Δ = 38km		
	Pg eZ	21	08 28.0
	Sg eNE		08 33.2
OJC	Δ = 81km		
	Pg eZ	21	08 35.2
	Sg eE		08 45.0
NIE	Δ = 149km		
	Pg eZ	21	08 46.7
	Sg eE		09 05.9
KSP	Δ = 181km		
	Pg eZ	21	08 51.3
	Sg eN		09 12.8

SEP 9

GIG: φ = 50.363°N, λ = 18.867°E
H = 17:11:03.0, M = 2.5

OJC	Δ = 69km		
	Pg eZ	17	11 15.0
	Sg eN		11 24.0

NIE Δ = 148km
Pg eZ 17 11 29.0
Sg eN 11 47.4

KSP Δ = 189km
Pg eZ 17 11 33.9
Sg eN 11 57.3

SEP 12
GIG: φ = 50.213°N, λ = 19.064°E
H = 15:01:47.3, M = 2.4

OJC Δ = 52km
Pg eZ 15 01 56.2
Sg eNE 02 03.3

NIE Δ = 126km
Pg eZ 15 02 09.2
Sg eN 02 25.2

KSP Δ = 208km
Pg eZ 15 02 21.6
Sg eZ 02 46.1

SEP 13
GIG: φ = 50.258°N, λ = 18.859°E
H = 11:21:36.1, M = 2.2

OJC Δ = 67km
Pg eZ 11 21 48.0
Sg eE 21 56.3

NIE Δ = 140km
Pg eZ 11 22 00.3
Sg eE 22 18.4

KSP Δ = 193km
Pg eZ 11 22 08.4
Sg eN 22 31.5

SEP 13
GIG: φ = 50.238°N, λ = 18.991°E
H = 12:01:40.2, M = 2.3

OJC Δ = 58km
Pg eZ 12 01 50.1
Sg eE 01 57.7

NIE Δ = 132km
Pg eZ 12 02 03.3
Sg eE 02 20.3

KSP Δ = 202km
Pg eZ 12 02 13.3
Sg eN 02 38.7

SEP 13
GIG: φ = 50.079°N, λ = 19.126°E
H = 23:52:09.1, M = 2.5

OJC Δ = 51km
Pg eZ 23 52 18.2
Sg eE 52 25.4

RAC Δ = 66km
Pg eZ 23 52 20.6
Sg eNE 52 29.5

NIE Δ = 113km
Pg eZ 23 52 28.8
(Sg) eE 52 44.8

KSP Δ = 218km
Pn eZ 23 52 42.7
Pg eN 52 44.5
Sn eN 53 09.5
Sg eN 53 12.1

SEP 14
φ = 50.25°N, λ = 18.82°E
H = 04:11:56.6, M = 2.2

OJC Δ = 70km
Pg eZ 04 12 09.2
Sg eE 12 17.2

NIE Δ = 142km
Pg eZ 04 12 21.1
Sg eE 12 38.8

KSP Δ = 190km
Pg eZ 04 12 28.5
Sg eN 12 51.4

SEP 14
φ = 50.25°N, λ = 19.06°E
H = 17:42:16.3, M = 2.4

OJC Δ = 53km
Pg eZ 17 42 25.4
Sg eN 42 32.6

NIE Δ = 128km
Pg eZ 17 42 39.0
Sg eN 42 54.5

KSP Δ = 207km
Pg eZ 17 42 50.3
Sg eZ 43 15.3

SEP 15

GIG: φ = 50.213°N, λ = 19.067°E
H = 14:50:05.8, M = 2.4

OJC Δ = 52km
Pg eZ 14 50 14.7
Sg eN 50 21.5

NIE Δ = 126km
Pg eZ 14 50 28.2
Sg eE 50 44.8

KSP Δ = 208km
Pg eZ 14 50 40.0
Sg eN 51 04.2

SEP 16

GIG: φ = 50.363°N, λ = 18.867°E
H = 07:49:58.0, M = 2.4

OJC Δ = 69km
Pg eZ 07 50 10.7
Sg eE 50 18.9

NIE Δ = 148km
Pg eZ 07 50 24.0
Sg eN 50 41.6

KSP Δ = 189km
Pg eZ 07 50 28.6
Sg eN 50 52.7

SEP 16

GIG: φ = 50.255°N, λ = 18.860°E
H = 10:28:48.5, M = 2.4

OJC Δ = 67km
Pg eZ 10 29 00.3
Sg eE 29 08.7

NIE Δ = 140km
Pg eZ 10 29 12.7
Sg eE 29 29.7

KSP Δ = 193km
Pg eZ 10 29 20.7
Sg eN 29 43.1

SEP 16

φ = 50.29°N, λ = 18.99°E
H = 16:24:25.6, M = 2.1

OJC Δ = 58km
Pg eZ 16 24 35.7
Sg eE 24 42.9

NIE Δ = 136km
Pg eZ 16 24 49.2
Sg eE 25 05.3

KSP Δ = 201km
Pg eZ 16 24 58.9
Sg eE 25 23.1

SEP 16

GIG: φ = 50.262°N, λ = 18.898°E
H = 20:25:24.2, M = 2.4

OJC Δ = 64km
Pg eZ 20 25 35.4
Sg eN 25 43.7

NIE Δ = 139km
Pg eZ 20 25 48.1
Sg eE 26 05.9

KSP Δ = 195km
Pg eZ 20 25 56.8
Sg eN 26 19.7

SEP 16

GIG: φ = 50.213°N, λ = 19.065°E
H = 22:39:44.1, M = 2.2

OJC Δ = 52km
Pg eZ 22 39 53.3
Sg eN 40 00.0

NIE Δ = 126km
Pg eZ 22 40 06.1
Sg eNE 40 22.3

KSP Δ = 208km
Pg eE 22 40 18.6
Sg eN 40 43.5

SEP 17

GIG: φ = 50.211°N, λ = 19.062°E
H = 01:27:29.4, M = 2.2

OJC Δ = 52km
Pg eZ 01 27 38.0
Sg eE 27 45.5

NIE Δ = 126km
Pg eZ 01 27 51.3
Sg eE 28 08.6

KSP Δ = 208km
Pg eZ 01 28 03.2
Sg eN 28 28.4

SEP 17

GIG: φ = 50.362°N, λ = 18.864°E
H = 07:41:52.4, M = 2.4

OJC Δ = 69km
Pg eZ 07 42 04.9
Sg eE 42 13.1

NIE Δ = 148km
Pg eZ 07 42 18.3
Sg eE 42 36.2

KSP Δ = 189km
Pg eZ 07 42 23.1
Sg eE 42 45.9

SEP 17

GIG: φ = 50.256°N, λ = 18.861°E
H = 12:59:50.2, M = 2.0

OJC Δ = 67km
Pg eZ 13 00 01.8
Sg eEN 00 10.4

NIE Δ = 140km
Pg eZ 13 00 14.6
Sg eN 00 31.3

KSP Δ = 193km, M = 1.9
Pg eZ 13 00 21.6
Sg eN 00 44.8

SEP 17

GIG: φ = 50.364°N, λ = 18.911°E
H = 20:54:21.5, M = 2.5

RAC Δ = 60km
Pg eZ 20 54 32.4
Sg eNE 54 40.3

OJC Δ = 65km
Pg iZ 20 54 32.8 D
Sg iN 54 41.6

NIE Δ = 146km
Pg eZ 20 54 47.0
Sg eN 55 04.8

KSP Δ = 192km
Pn eZ 20 54 52.3
Pg eZ 54 53.3
Sg eN 55 16.5

SEP 19

GIG: φ = 50.368°N, λ = 18.909°E
H = 00:14:55.2, M = 2.6

RAC Δ = 60km
Pg eZ 00 15 06.0
Sg eNE 15 14.0

OJC Δ = 65km
Pg eZ 00 15 06.5
Sg eE 15 15.3

NIE Δ = 146km
Pg eZ 00 15 19.9
Sg eE 15 38.4

KSP Δ = 192km
Pg eN 00 15 27.0
Sg eE 15 50.1

SEP 19

GIG: φ = 50.213°N, λ = 19.064°E
H = 14:34:06.3, M = 2.3

OJC Δ = 52km
Pg eZ 14 34 15.5
Sg eN 34 22.6

KSP Δ = 208km
Pg eE 14 34 40.5
Sg eN 35 05.3

SEP 20

GIG: φ = 50.213°N, λ = 19.064°E
H = 12:17:04.4, M = 2.4

OJC Δ = 52km
Pg eZ 12 17 13.0
Sg eN 17 20.2

NIE Δ = 126km
Pg eZ 12 17 26.1
Sg eN 17 42.1

KSP Δ = 208km
Pn eZ 12 17 37.5
Pg eZ 17 39.7
Sn eN 18 01.8
Sg eN 18 04.2

SEP 21

φ = 50.28°N, λ = 18.87°E
H = 00:58:26.2, M = 2.2

OJC Δ = 66km
Pg eZ 00 58 38.1
Sg eE 58 46.5

NIE Δ = 142km
Pg eZ 00 58 50.5
Sg eE 59 08.3

KSP Δ = 192km
Pg eZ 00 58 58.1
Sg eN 59 21.6

SEP 22

GIG: φ = 50.255°N, λ = 18.860°E
H = 09:13:01.3, M = 2.2

OJC	Δ = 67km		
	Pg	eZ	09 13 13.7
	Sg	eE	13 21.6
NIE	Δ = 140km		
	Pg	eZ	09 13 25.6
	Sg	eN	13 44.4
KSP	Δ = 193km		
	Pg	eZ	09 13 33.4
	Sn	eE	13 55.2

SEP 24

GIG: φ = 50.261°N, λ = 18.898°E
H = 06:14:37.0, M = 2.2

OJC	Δ = 64km		
	Pg	eZ	06 14 48.2
	Sg	eE	14 56.4
NIE	Δ = 139km		
	Pg	eZ	06 15 01.4
	Sg	eE	15 19.0
KSP	Δ = 195km		
	Pg	eZ	06 15 09.1
	Sn	eN	15 31.5

SEP 25

GIG: φ = 50.270°N, λ = 18.845°E
H = 00:42:23.7, M = 2.7

RAC	Δ = 50km		
	Pg	eZ	00 42 33.3
	Sg	eNE	42 39.4
OJC	Δ = 68km		
	Pg	eZ	00 42 35.7
	Sg	eE	42 45.0
NIE	Δ = 142km		
	Pg	eZ	00 42 48.4
	Sg	eN	43 06.0
KSP	Δ = 192km		
	Pn	eZ	00 42 53.9
	Pg	iZ	42 56.0
	Sg	eE	43 18.3
KWP	Δ = 286km		
	Pn	eZ	00 43 08.0
	Pg	eZ	43 14.9
	Sg	eNE	43 51.9

SEP 26

GIG: φ = 50.214°N, λ = 19.064°E
H = 14:20:08.9, M = 2.2

OJC	Δ = 52km		
	Pg	eZ	14 20 18.0
	Sg	eN	20 24.7
NIE	Δ = 126km		
	Pg	eZ	14 20 31.0
	Sg	eE	20 47.0
KSP	Δ = 208km		
	Pg	eZ	14 20 44.0
	Sg	eN	21 08.1

SEP 26

GIG: φ = 50.255°N, λ = 18.862°E
H = 18:30:01.5, M = 2.3

OJC	Δ = 67km		
	Pg	eZ	18 30 13.3
	Sg	eE	30 22.0
NIE	Δ = 140km		
	Pg	eZ	18 30 25.9
	Sg	eE	30 43.8
KSP	Δ = 193km		
	Pg	eZ	18 30 33.5
	Sg	eN	30 56.5

SEP 26

GIG: φ = 50.255°N, λ = 18.862°E
H = 19:25:42.9, M = 2.7

RAC	Δ = 51km		
	Pg	eZ	19 25 52.5
	Sg	eNE	25 59.5
OJC	Δ = 67km		
	Pg	eZ	19 25 54.5
	Sg	eN	26 02.9
NIE	Δ = 139km		
	Pg	eZ	19 26 07.0
	Sg	eN	26 24.4
KSP	Δ = 193km		
	Pg	iZ	19 26 15.1 D
	Sg	eE	26 37.5
KWP	Δ = 284km		
	Pn	eZ	19 26 26.9
	Pg	eZ	26 32.9
	Sg	eNE	27 12.7

SEP 27

GIG: φ = 50.213°N, λ = 19.064°E
H = 20:04:04.8, M = 2.2

OJC Δ = 52km
Pg eZ 20 04 13.4
Sg eN 04 20.3

NIE Δ = 126km
Pg eZ 20 04 26.5
Sg eE 04 42.5

KSP Δ = 208km
Pg eZ 20 04 40.0
Sg eN 05 03.1

SEP 27

φ = 50.24°N, λ = 18.84°E
H = 20:46:13.1, M = 2.1

RAC Δ = 49km
Pg eZ 20 46 22.3
Sg eNE 46 27.9

OJC Δ = 69km
Pg eZ 20 46 25.8
Sg eE 46 33.7

NIE Δ = 140km
Pg eZ 20 46 37.5
Sg eN 46 54.7

KSP Δ = 192km
Pg eZ 20 46 45.3
Sg eN 47 06.9

SEP 28

φ = 50.40°N, λ = 18.87°E
H = 02:21:04.4, M = 2.2

OJC Δ = 69km
Pg eZ 02 21 16.4
Sg eN 21 25.3

NIE Δ = 151km
Pg eZ 02 21 30.7
Sg eE 21 48.4

KSP Δ = 188km
Pg eE 02 21 35.6
Sg eN 21 58.6

SEP 28

φ = 50.23°N, λ = 18.82°E
H = 14:31:00.6, M = 2.0

OJC Δ = 70km
Pg eZ 14 31 12.7
Sg eN 31 22.1

NIE Δ = 140km
Pg eZ 14 31 24.4
Sg eE 31 42.4

KSP Δ = 192km
Pg eE 14 31 31.7
Sg eN 31 56.6

SEP 29

GIG: φ = 50.365°N, λ = 18.913°E
H = 12:11:35.7, M = 2.5

OJC Δ = 65km
Pg eZ 12 11 47.3
Sg eN 11 56.4

NIE Δ = 146km
Pg eZ 12 12 01.6
Sg eN 12 19.5

KSP Δ = 192km
Pg eZ 12 12 07.0
Sg eN 12 30.1

SEP 29

GIG: φ = 50.080°N, λ = 18.431°E
H = 21:31:37.6, M = 1.9

RAC Δ = 17km
Pg eZ 21 31 41.5
Sg eNE 31 44.3

OJC Δ = 99km
Pg eZ 21 31 54.9
Sg eN 32 07.4

NIE Δ = 154km
Pg eZ 21 32 04.8
Sg eE 32 24.5

SEP 29

GIG: φ = 50.081°N, λ = 18.432°E
H = 22:19:43.4, M = 2.3

RAC Δ = 17km
Pg eZ 22 19 47.5
Sg eNE 19 50.4

OJC Δ = 99km
Pg eZ 22 20 00.3
Sg eN 20 12.7

NIE Δ = 154km
Pg eZ 22 20 10.2
Sg eE 20 30.5

KSP Δ = 174km
Pg eZ 22 20 11.5
Sg eN 20 32.7

SEP 30
GIG: φ = 50.363°N, λ = 18.871°E
H = 00:57:59.9, M = 2.3

OJC	Δ = 68km		
	Pg eZ	00 58 12.4	
	Sg eN	58 20.6	
NIE	Δ = 148km		
	Pg eZ	00 58 26.0	
	Sg eE	58 43.3	
KSP	Δ = 190km		
	Pg eE	00 58 30.8	
	Sn eN	58 52.0	
	Sg eN	58 54.4	

SEP 30
GIG: φ = 50.079°N, λ = 19.124°E
H = 04:57:46.8, M = 2.6

OJC	Δ = 50km		
	Pg iZ	04 57 55.3	D
	Sg iN	58 02.2	
NIE	Δ = 113km		
	Pg eZ	04 58 05.9	
	Sg eE	58 21.9	
KSP	Δ = 218km		
	Pg eZ	04 58 22.5	
	Sg eN	58 48.7	

SEP 30
GIG: φ = 50.065°N, λ = 18.461°E
H = 07:45:29.3, M = 2.3

RAC	Δ = 19km		
	Pg eZ	07 45 33.7	
	Sg eNE	45 36.8	
OJC	Δ = 97km		
	Pg eZ	07 45 45.4	
	Sg eN	45 59.3	
NIE	Δ = 152km		
	Pg eZ	07 45 56.4	
	Sg eN	46 15.5	
KSP	Δ = 176km		
	Pg eZ	07 45 57.9	
	Sg eE	46 19.8	

SEP 30
GIG: φ = 50.363°N, λ = 18.867°E
H = 13:58:52.5, M = 2.3

OJC	Δ = 68km		
	Pg eZ	13 59 04.5	
	Sg eN	59 13.2	
NIE	Δ = 147km		
	Pg eZ	13 59 18.2	
	Sg eE	59 36.7	
KSP	Δ = 190km		
	Pg eZ	13 59 23.9	
	Sg eN	59 46.8	

SEP 30
GIG: φ = 50.242°N, λ = 18.924°E
H = 20:02:17.1, M = 2.4

OJC	Δ = 62km		
	Pg eZ	20 02 27.8	
	Sg eE	02 35.8	
NIE	Δ = 136km		
	Pg eZ	20 02 40.5	
	Sg eE	02 57.9	
KSP	Δ = 198km		
	Pg eE	20 02 49.9	
	Sg eN	03 13.4	

OCT 1
GIG: φ = 50.065°N, λ = 18.462°E
H = 01:28:25.8, M = 2.6

RAC	Δ = 19km		
	Pg iZ	01 28 30.1	D
	Sg iN	28 33.6	
OJC	Δ = 97km		
	Pg eZ	01 28 42.3	
	Sg eN	28 55.4	
NIE	Δ = 152km		
	Pg eZ	01 28 52.1	
	Sg eE	29 11.1	
KSP	Δ = 176km		
	Pg eZ	01 28 54.2	
	Sg eN	29 16.2	

OCT 1

GIG: φ = 50.364°N, λ = 18.907°E
H = 04:12:53.8, M = 2.0

OJC Δ = 65km
Pg eZ 04 13 05.0
Sg eN 13 13.9

NIE Δ = 146km
Pg eZ 04 13 18.6
Sg eN 13 36.8

KSP Δ = 192km
Pg eE 04 13 26.8
(Sg) eZ 13 47.3

OCT 4

GIG: φ = 50.266°N, λ = 18.882°E
H = 17:25:31.9, M = 2.4

OJC Δ = 66km
Pg eZ 17 25 43.4
Sg eE 25 51.9

NIE Δ = 140km
Pg eZ 17 25 56.5
Sg eE 26 14.2

KSP Δ = 194km
Pg eZ 17 26 04.4
Sg eN 26 27.0

OCT 4

GIG: φ = 50.363°N, λ = 18.866°E
H = 18:40:42.4, M = 2.2

OJC Δ = 69km
Pg eZ 18 40 54.6
Sg eE 41 03.3

NIE Δ = 148km
Pg eZ 18 41 08.7
Sg eN 41 26.3

KSP Δ = 189km
Pg eZ 18 41 12.8
Sn eN 41 35.2

OCT 5

GIG: φ = 50.255°N, λ = 18.862°E
H = 04:31:35.4, M = 2.2

OJC Δ = 67km
Pg eZ 04 31 47.1
Sg NE 31 55.6

NIE Δ = 140km
Pg eZ 04 31 59.5
Sg eE 32 17.5

KSP Δ = 193km
Pg eZ 04 32 07.7
Sg eN 32 29.9

OCT 5

GIG: φ = 50.363°N, λ = 18.864°E
H = 18:49:34.3, M = 2.3

OJC Δ = 69km
Pg eZ 18 49 46.5
Sg eE 49 55.3

NIE Δ = 148km
Pg eZ 18 50 00.4
Sg eN 50 18.6

KSP Δ = 189km
Pg eE 18 50 05.8
Sg eN 50 28.0

OCT 6

GIG: φ = 50.257°N, λ = 18.860°E
H = 07:25:39.8, M = 2.6

RAC Δ = 52km
Pg eZ 07 25 49.5
Sg eNE 25 56.6

OJC Δ = 67km
Pg eZ 07 25 51.5
Sg eN 25 59.7

NIE Δ = 140km
Pg eZ 07 26 03.8
Sg eE 26 20.8

KSP Δ = 193km
Pg eZ 07 26 11.9
Sg eN 26 34.3

KWP Δ = 284km
Pg eZ 07 26 29.9
Sg eNE 27 09.7

OCT 6

GIG: φ = 50.106°N, λ = 19.164°E
H = 20:51:40.7, M = 2.6

OJC Δ = 47km
Pg eZ 20 51 48.5
Sg eN 51 54.7

NIE Δ = 113km
Pg eZ 20 52 00.2
(Sg) eE 52 16.1

KSP Δ = 219km
Pg eZ 20 52 16.8
Sg eN 52 42.5

OCT 7
GIG: φ = 50.365°N, λ = 18.908°E
H = 13:16:00.9, M = 2.3

OJC Δ = 66km
Pg eZ 13 16 12.1
Sg eE 16 21.2

NIE Δ = 146km
Pg eZ 13 16 26.4
Sg eE 16 44.6

KSP Δ = 192km
Pg eE 13 16 32.5
Sg eN 16 55.9

OCT 8
GIG: φ = 50.213°N, λ = 19.126°E
H = 03:12:49.8, M = 2.4

OJC Δ = 48km
Pg iZ 03 12 57.9 D
Sg iE 13 04.8

NIE Δ = 123km
Pg eZ 03 13 11.6
Sg eE 13 27.3

KSP Δ = 212km
Pg eE 03 13 23.7
Sg eN 13 49.5

KWP Δ = 265km
P eZ 03 13 33.6
Sg eNE 14 07.0

OCT 8
GIG: φ = 50.365°N, λ = 18.908°E
H = 20:58:27.6, M = 2.1

OJC Δ = 66km
Pg eZ 20 58 39.2
Sg eN 58 46.8

NIE Δ = 146km
Pg eZ 20 58 53.4
Sg eE 59 11.5

KSP Δ = 192km
Pg eE 20 58 59.2
Sg eN 59 23.8

OCT 9
GIG: φ = 50.362°N, λ = 18.867°E
H = 10:36:04.4, M = 2.3

OJC Δ = 68km
Pg eZ 10 36 15.6
Sg eN 36 24.5

NIE Δ = 148km
Pg eZ 10 36 30.3
Sg eN 36 48.0

KSP Δ = 190km
Pg eZ 10 36 35.4
Sg eN 36 58.2

OCT 10
GIG: φ = 50.266°N, λ = 18.882°E
H = 21:32:00.2, M = 2.4

OJC Δ = 65km
Pg eZ 21 32 11.9
Sg eE 32 19.5

NIE Δ = 140km
Pg eZ 21 32 25.1
Sg eE 32 42.4

KSP Δ = 194km
Pg eZ 21 32 33.0
Sg eN 32 55.7

KWP Δ = 282km
Pg eZ 21 32 51.0

OCT 11
GIG: φ = 50.091°N, λ = 18.441°E
H = 01:26:25.6, M = 2.5

RAC Δ = 18km
Pg iZ 01 26 29.1 D
Sg eNE 26 32.5

OJC Δ = 98km
Pg eZ 01 26 41.9
Sg eN 26 54.7

NIE Δ = 154km
Pg eZ 01 26 51.7
Sg eN 27 11.8

KSP Δ = 174km
Pn eZ 01 26 53.0
Pg Z 26 55.4
Sg eN 27 16.1

OCT 11

GIG: φ = 50.363°N, λ = 18.865°E
H = 15:00:50.2, M = 2.4

OJC	Δ = 69km		
	Pg eZ	15 01 02.5	
	Sg eE	01 11.0	
NIE	Δ = 148km		
	Pg eZ	15 01 16.2	
	Sg eN	01 34.3	
KSP	Δ = 189km		
	Pg eZ	15 01 21.4	
	Sg eN	01 44.4	

OCT 13

GIG: φ = 50.255°N, λ = 18.862°E
H = 01:30:56.1, M = 2.3

RAC	Δ = 51km		
	Pg eZ	01 31 05.9	
	Sg eNE	31 11.3	
OJC	Δ = 67km		
	Pg eZ	01 31 07.9	
	Sg eEN	31 16.5	
NIE	Δ = 139km		
	Pg eZ	01 31 20.2	
	Sg eE	31 38.1	
KSP	Δ = 193km		
	Pg eZ	01 31 28.5	
	Sg eE	31 51.4	

OCT 13

GIG: φ = 50.265°N, λ = 18.860°E
H = 03:43:22.3, M = 2.7

RAC	Δ = 51km		
	Pg eZ	03 43 31.9	
	Sg eNE	43 38.4	
OJC	Δ = 67km		
	Pg eZ	03 43 34.1	
	Sg eN	43 42.6	
NIE	Δ = 140km		
	Pg eZ	03 43 46.4	
	Sg eE	44 04.2	
KSP	Δ = 193km		
	Pn eZ	03 43 53.0	
	Pg iZ	43 54.7	
	Sg eN	44 17.5	
KWP	Δ = 285km		
	Pg eZ	03 44 11.6	
	Sg eNE	44 50.2	

OCT 14

GIG: φ = 50.256°N, λ = 18.862°E
H = 00:06:10.5, M = 2.6

RAC	Δ = 52km		
	Pg eZ	00 06 20.0	
	Sg eNE	06 27.0	
OJC	Δ = 67km		
	Pg eZ	00 06 22.2	
	Sg eE	06 30.8	
NIE	Δ = 140km		
	Pg eZ	00 06 34.7	
	Sg eN	06 52.0	
KSP	Δ = 193km		
	Pg iZ	00 06 42.8	D
	Sg eE	07 05.1	
KWP	Δ = 284km		
	Pg eZ	00 06 58.6	
	Sg eNE	07 40.7	

OCT 14

GIG: φ = 50.363°N, λ = 18.866°E
H = 03:22:54.2, M = 2.4

OJC	Δ = 68km		
	Pg eZ	03 23 06.4	
	Sg eE	23 15.0	
NIE	Δ = 148km		
	Pg eZ	03 23 20.1	
	Sg eE	23 37.6	
KSP	Δ = 189km		
	Pg eZ	03 23 25.2	
	Sn eN	23 47.0	

OCT 14

GIG: φ = 50.364°N, λ = 18.909°E
H = 04:23:27.4, M = 2.4

OJC	Δ = 66km		
	Pg eZ	04 23 38.8	
	Sg eN	23 47.8	
NIE	Δ = 146km		
	Pg eZ	04 23 52.4	
	Sg eN	24 10.0	

KSP Δ = 192km
Pg eZ 04 23 59.1
Sn eE 24 20.1
Sg eE 24 22.7

OCT 14

GIG: φ = 50.364°N, λ = 18.866°E
H = 19:31:10.6, M = 2.2

OJC Δ = 68km
Pg eZ 19 31 22.8
Sg eE 31 31.3

NIE Δ = 148km
Pg eZ 19 31 36.4
Sg eE 31 53.9

KSP Δ = 189km
Pg eZ 19 31 41.7
Sg eN 32 04.5

OCT 15

φ = 50.26°N, λ = 19.09°E
H = 15:11:18.1, M = 2.3

OJC Δ = 50km
Pg eZ 15 11 26.9
Sg eN 11 33.8

NIE Δ = 129km
Pg eZ 15 11 40.3
Sg eE 11 56.9

KSP Δ = 208km
Pg eZ 15 11 53.0
Sg eN 12 17.5

OCT 16

GIG: φ = 50.368°N, λ = 18.909°E
H = 08:54:18.8, M = 2.2

OJC Δ = 66km
Pg eZ 08 54 30.3
Sg eN 54 38.9

NIE Δ = 147km
Pg eZ 08 54 44.9
Sg eN 55 02.3

KSP Δ = 192km
Pg eE 08 54 50.5
Sg eN 55 13.1

OCT 17

GIG: φ = 50.235°N, λ = 18.929°E
H = 18:14:07.1, M = 2.2

OJC Δ = 62km
Pg eZ 18 14 18.0
Sg eE 14 26.0

NIE Δ = 135km
Pg eZ 18 14 30.8
Sg eE 14 48.1

KSP Δ = 199km
Pg eZ 18 14 40.0
Sg eN 15 03.3

OCT 17

GIG: φ = 50.363°N, λ = 18.867°E
H = 18:55:51.6, M = 2.5

OJC Δ = 68km
Pg eZ 18 56 03.8
Sg eE 56 12.3

NIE Δ = 148km
Pg eZ 18 56 17.5
Sg eE 56 35.0

KSP Δ = 189km
Pg eEZ 18 56 23.0
Sg eN 56 45.6

OCT 18

GIG: φ = 50.256°N, λ = 18.860°E
H = 00:58:51.5, M = 2.6

RAC Δ = 52km
Pg eZ 00 59 01.0
Sg eNE 59 08.1

OJC Δ = 67km
Pg eZ 00 59 03.1
Sg eE 59 11.6

NIE Δ = 140km
Pg eZ 00 59 15.3
Sg eN 59 33.4

KSP Δ = 193km
Pg eZ 00 59 23.7
Sg eN 59 46.1

KWP Δ = 284km
P eZ 00 59 41.2
Sg eNE 01 00 20.6

OCT 18

GIG: φ = 50.234°N, λ = 19.041°E
H = 11:25:32.0, M = 2.4

OJC	Δ = 54km		
	Pg	eZ	11 25 41.4
	Sg	eE	25 48.5
NIE	Δ = 129km		
	Pg	eZ	11 25 54.5
	Sg	eN	26 10.7
KSP	Δ = 206km		
	Pg	eZ	11 26 05.5
	Sg	eN	26 30.0

OCT 18

GIG: φ = 50.363°N, λ = 18.865°E
H = 13:43:29.4, M = 2.3

OJC	Δ = 68km		
	Pg	eZ	13 43 41.4
	Sg	eEN	43 50.2
NIE	Δ = 148km		
	Pg	eZ	13 43 55.1
	Sg	eN	44 12.9
KSP	Δ = 190km		
	Pg	E	13 44 01.6
	Sg	eN	44 23.4

OCT 20

GIG: φ = 50.362°N, λ = 18.864°E
H = 02:09:40.2, M = 2.3

OJC	Δ = 69km		
	Pg	eZ	02 09 52.6
	Sg	eN	10 00.9
NIE	Δ = 148km		
	Pg	eZ	02 10 06.1
	Sg	eE	10 23.3
KSP	Δ = 189km		
	Pn	eE	02 10 09.9
	Sg	eE	10 34.9

OCT 20

GIG: φ = 50.264°N, λ = 18.868°E
H = 14:28:01.5, M = 2.6

OJC	Δ = 66km		
	Pg	eZ	14 28 13.3
	Sg	eN	28 21.7
NIE	Δ = 140km		
	Pg	eZ	14 28 26.4
	Sg	eN	28 43.5
KSP	Δ = 193km		
	Pg	iZ	14 28 33.9 C
	Sg	eE	28 56.7
KWP	Δ = 284km		
	Pg	eZ	14 28 51.2
	Sg	eNE	29 34.0

OCT 20

GIG: φ = 50.363°N, λ = 18.865°E
H = 17:28:14.6, M = 2.4

OJC	Δ = 68km		
	Pg	eZ	17 28 26.4
	Sg	eE	28 35.0
NIE	Δ = 148km		
	Pg	eZ	17 28 40.9
	Sg	eN	28 58.8
KSP	Δ = 190km		
	Pg	eZ	17 28 46.0
	Sn	eN	29 06.6
	Sg	eN	29 09.1

OCT 22

GIG: φ = 50.255°N, λ = 18.862°E
H = 03:58:47.3, M = 2.5

RAC	Δ = 52km		
	Pg	eZ	03 58 56.9
	Sg	eNE	59 03.7
OJC	Δ = 67km		
	Pg	eZ	03 58 59.0
	Sg	eE	59 07.5
NIE	Δ = 140km		
	Pg	eZ	03 59 11.4
	Sg	eE	59 28.5
KSP	Δ = 193km		
	Pn	eZ	03 59 17.7
	Pg	iZ	59 19.7
	Sg	eN	59 42.2
KWP	Δ = 284km		
	Pg	eZ	03 59 37.2
	S	eNE	04 00 07.8

OCT 22

GIG: φ = 50.066°N, λ = 18.462°E
H = 09:06:35.9, M = 2.5

RAC	Δ = 19km		
	Pg	iZ	09 06 40.1 C
	Sg	eNE	06 43.6

OJC Δ = 97km
Pg eZ 09 06 52.0
Sg eN 07 04.0

NIE Δ = 152km
Pg eZ 09 07 02.1
Sg eE 07 21.4

KSP Δ = 176km
Pn eZ 09 07 03.8
Sn eE 07 25.2

OCT 25
GIG: φ = 50.363°N, λ = 18.866°E
H = 14:41:46.5, M = 2.4

OJC Δ = 68km
Pg eZ 14 41 58.7
Sg eE 42 07.4

KSP Δ = 189km
Pn eZ 14 42 16.9
Sg eN 42 40.7

OCT 25
GIG: φ = 50.066°N, λ = 18.459°E
H = 19:02:51.2, M = 2.6

RAC Δ = 19km
Pg iZ 19 02 55.5 D
Sg iN 02 58.9

OJC Δ = 97km
Pg eZ 19 03 07.6
Sg eN 03 20.0

NIE Δ = 152km
Pg eZ 19 03 17.7
Sg eN 03 36.2

KSP Δ = 176km
Pg eZ 19 03 20.3
Sg eE 03 41.7

OCT 26
GIG: φ = 50.079°N, λ = 19.124°E
H = 03:50:21.0, M = 2.4

OJC Δ = 50km
Pg eZ 03 50 29.8
Sg eN 50 36.3

NIE Δ = 113km
Pg eZ 03 50 40.5
(Sg) eE 50 56.5

KSP Δ = 218km
Pg eZ 03 50 56.4
Sg eN 51 23.5

OCT 27
GIG: φ = 50.362°N, λ = 18.865°E
H = 02:44:56.2, M = 2.4

OJC Δ = 68km
Pg eZ 02 45 08.2
Sg eE 45 17.1

NIE Δ = 148km
Pg eZ 02 45 22.1
Sg eE 45 39.8

KSP Δ = 190km
Pg eZ 02 45 27.3
Sg eN 45 50.4

OCT 28
φ = 50.27°N, λ = 19.06°E
H = 00:27:15.2, M = 2.0

OJC Δ = 53km
Pg eZ 00 27 24.6
Sg eE 27 31.7

NIE Δ = 131km
Pg eZ 00 27 37.9
Sg eN 27 54.0

KSP Δ = 205km
Pg eZ 00 27 49.3
Sg eZ 28 13.7

OCT 28
φ = 50.36°N, λ = 18.88°E
H = 20:19:17.4, M = 2.3

OJC Δ = 67km
Pg eZ 20 19 29.2
Sg eE 19 37.8

NIE Δ = 146km
Pg eZ 20 19 42.9
Sg eE 20 00.5

KSP Δ = 191km
Pg eE 20 19 49.3
Sg eN 20 11.5

OCT 29
GIG: φ = 50.106°N, λ = 19.167°E
H = 03:34:16.8, M = 2.5

OJC Δ = 46km
Pg eZ 03 34 24.8
Sg eN 34 30.9

NIE Δ = 112km
Pg eZ 03 34 36.2
Sg eN 34 51.7

KSP Δ = 220km
Pg eE 03 34 53.5
Sg eE 35 18.7

OCT 29
GIG: φ = 50.066°N, λ = 18.461°E
H = 03:57:24.1, M = 2.3

RAC Δ = 19km
Pg iZ 03 57 28.5 D
Sg eNE 57 32.0

OJC Δ = 97km
Pg eZ 03 57 40.5
Sg eN 57 53.5

NIE Δ = 152km
Pg eZ 03 57 50.6
Sg eN 58 09.2

KSP Δ = 176km
Pn eZ 03 57 52.5
Sg eN 58 14.5

OCT 29
GIG: φ = 50.255°N, λ = 18.862°E
H = 05:04:41.2, M = 2.7

RAC Δ = 52km
Pg eZ 05 04 50.9
Sg eNE 04 57.7

OJC Δ = 67km
Pg eZ 05 04 52.9
Sg eN 05 01.4

NIE Δ = 140km
Pg eZ 05 05 05.3
Sg eE 05 22.4

KSP Δ = 193km
Pn eZ 05 05 12.3
Pg iZ 05 13.5
Sg eE 05 35.8

KWP Δ = 284km
Pg eZ 05 05 31.4
Sg eNE 06 05.3

OCT 31
GIG: φ = 50.256°N, λ = 18.859°E
H = 02:53:03.1, M = 2.1

OJC Δ = 67km
Pg eZ 02 53 14.9
Sg eE 53 23.6

NIE Δ = 140km
Pg eZ 02 53 27.4
Sg eE 53 45.3

KSP Δ = 193km
Pn eZ 02 53 34.5
Sg eN 53 57.5

OCT 31
GIG: φ = 50.257°N, λ = 18.860°E
H = 11:33:23.6, M = 2.4

OJC Δ = 67km
Pg eZ 11 33 35.3
Sg eE 33 43.7

NIE Δ = 140km
Pg eZ 11 33 47.7
Sg eE 34 05.5

KSP Δ = 193km
Pn eZ 11 33 54.5
Pg eZ 33 56.0
Sg eN 34 18.9

OCT 31
GIG: φ = 50.362°N, λ = 18.864°E
H = 12:43:44.4, M = 2.3

OJC Δ = 68km
Pg eZ 12 43 56.5
Sg eN 44 04.5

NIE Δ = 148km
Pg eZ 12 44 10.7
Sg eE 44 27.9

KSP Δ = 189km
Pg Z 12 44 15.9
Sg eN 44 38.6

NOV 1
GIG: φ = 50.212°N, λ = 19.065°E
H = 05:20:30.7, M = 2.1

OJC Δ = 52km
Pg eZ 05 20 39.6
Sg eN 20 46.8

NIE Δ = 126km
Pg eZ 05 20 52.7
Sg eN 21 08.6

KSP Δ = 208km
Pg eZ 05 21 05.5
Sg eN 21 30.4

NOV 2
GIG: φ = 50.363°N, λ = 18.865°E
H = 07:49:24.5, M = 2.3

OJC Δ = 68km
Pg eZ 07 49 36.4
Sg eN 49 44.8

NIE Δ = 148km
(Pg) eZ 07 49 50.6
Sg eE 50 08.0

KSP Δ = 189km
Pg eZ 07 49 56.2
Sg eN 50 19.2

NOV 2
GIG: φ = 50.207°N, λ = 19.071°E
H = 12:52:28.8, M = 2.3

OJC Δ = 52km
Pg eZ 12 52 37.6
Sg eE 52 44.4

NIE Δ = 125km
Pg eZ 12 52 50.6
Sg eE 53 07.0

KSP Δ = 209km
Pg eE 12 53 02.9
Sg eN 53 27.8

NOV 3
GIG: φ = 50.363°N, λ = 18.865°E
H = 10:34:11.4, M = 2.3

OJC Δ = 68km
Pg eZ 10 34 23.6
Sg eN 34 31.5

NIE Δ = 148km
Pg eZ 10 34 37.3
(Sg) eN 34 53.8

KSP Δ = 190km
Pg eZ 10 34 43.0
Sg eN 35 05.9

NOV 4
GIG: φ = 50.265°N, λ = 18.904°E
H = 11:57:29.6, M = 2.4

OJC Δ = 64km
Pg eZ 11 57 40.5
Sg eE 57 49.2

NIE Δ = 139km
Pg eZ 11 57 53.5
Sg eN 58 11.4

KSP Δ = 196km
Pn eZ 11 58 01.0
Sn eN 58 23.9

NOV 5
φ = 50.24°N, λ = 19.04°E
H = 02:14:06.5, M = 2.0

OJC Δ = 54km
Pg eZ 02 14 15.9
Sg eE 14 23.4

NIE Δ = 130km, M = 1.8
Pg eZ 02 14 29.0
Sg eN 14 45.5

KSP Δ = 205km
Pg eE 02 14 40.2
Sg eE 15 05.3

NOV 5
GIG: φ = 50.066°N, λ = 18.461°E
H = 22:29:29.1, M = 2.3

RAC Δ = 19km
Pg iZ 22 29 33.3 D
Sg eNE 29 36.7

OJC Δ = 97km
Pg eZ 22 29 45.4
(Sg) eN 29 58.9

NIE Δ = 152km
Pg eZ 22 29 55.5
Sg eNE 30 14.1

KSP Δ = 176km
Pg eZ 22 29 58.5
Sg eE 30 19.9

NOV 7
GIG: φ = 50.234°N, λ = 19.041°E
H = 11:26:58.1, M = 2.2

OJC Δ = 54km
Pg eZ 11 27 07.8
Sg eE 27 14.9

KSP Δ = 206km
Pg eN 11 27 31.4
Sg eN 27 57.3

NOV 7

φ = 50.28°N, λ = 18.96°E
H = 19:26:10.3, M = 2.0

OJC Δ = 60km
Pg eZ 19 26 21.2
Sg eN 26 28.9

NIE Δ = 137km
Pg eZ 19 26 34.5
Sg eE 26 51.1

KSP Δ = 199km
Pg eE 19 26 43.3
Sg eN 27 06.8

NOV 7

φ = 50.10°N, λ = 18.46°E
H = 23:16:44.6, M = 2.1

RAC Δ = 19km
Pg iZ 23 16 48.9 D
Sg eNE 16 52.2

OJC Δ = 96km
Pg eZ 23 17 01.2
Sg eN 17 13.3

NIE Δ = 153km
Pg eZ 23 17 11.1
Sg eN 17 30.2

KSP Δ = 175km
Pg eZ 23 17 13.5
Sg eE 17 34.5

NOV 8

GIG: φ = 50.364°N, λ = 18.864°E
H = 21:34:47.8, M = 2.2

OJC Δ = 68km
Pg eZ 21 34 59.5
Sg eN 35 08.5

NIE Δ = 148km
Pg eZ 21 35 13.7
(Sg) eE 35 30.8

KSP Δ = 189km
Pg eE 21 35 18.7
Sg eE 35 42.4

NOV 8

GIG: φ = 50.241°N, λ = 18.907°E
H = 21:52:49.6, M = 2.2

OJC Δ = 64km
Pg eZ 21 53 00.8
Sg eN 53 09.1

NIE Δ = 137km
Pg eZ 21 53 13.3
Sg eN 53 31.3

KSP Δ = 197km
Pg eZ 21 53 22.2
Sg eN 53 45.0

NOV 9

GIG: φ = 50.364°N, λ = 18.864°E
H = 17:46:08.1, M = 2.4

OJC Δ = 69km
Pg eZ 17 46 20.3
Sg eN 46 28.7

NIE Δ = 148km
Pg eZ 17 46 34.2
Sg eE 46 51.6

KSP Δ = 189km
Pg eZ 17 46 39.4
Sg eN 47 01.7

NOV 10

GIG: φ = 50.259°N, λ = 18.860°E
H = 11:18:55.7, M = 2.5

OJC Δ = 67km
Pg eZ 11 19 07.0
Sg eE 19 15.7

NIE Δ = 141km
Pg eZ 11 19 21.0
Sg eE 19 38.7

KSP Δ = 193km
Pg eZ 11 19 27.4
Sg eN 19 50.4

NOV 10

φ = 50.28°N, λ = 18.91°E
H = 15:58:47.5, M = 2.2

OJC Δ = 64km
Pg eZ 15 58 58.7
Sg eE 59 06.7

NIE Δ = 139km
Pg eZ 15 59 11.5
Sg eE 59 28.7

KSP Δ = 196km
Pg eE 15 59 20.5
Sg eN 59 43.3

NOV 10
GIG: φ = 50.234°N, λ = 19.040°E
H = 18:40:04.6, M = 2.2

OJC Δ = 54km
Pg eZ 18 40 14.3
Sg eE 40 21.3

NIE Δ = 130km
Pg eZ 18 40 27.3
Sg eN 40 43.9

KSP Δ = 206km
Pg eN 18 40 38.7
(Sn) eE 41 00.9

NOV 11
GIG: φ = 50.255°N, λ = 18.862°E
H = 01:24:29.4, M = 2.6

RAC Δ = 52km
Pg eZ 01 24 38.9
Sg eNE 24 45.9

OJC Δ = 67km
Pg eZ 01 24 41.2
Sg eNE 24 49.6

NIE Δ = 140km
Pg eZ 01 24 53.7
Sg eN 25 10.9

KSP Δ = 193km
Pg eE 01 25 01.7
Sg eE 25 24.1

KWP Δ = 284km
Pg eZ 01 25 19.2
Sg eNE 25 59.6

NOV 11
GIG: φ = 50.064°N, λ = 18.459°E
H = 03:30:52.6, M = 2.2

RAC Δ = 19km
Pg eZ 03 30 56.8
Sg eNE 31 00.0

OJC Δ = 97km
Pg eZ 03 31 09.0
Sg eE 31 22.1

NIE Δ = 152km
Pg eZ 03 31 19.0
Sg eN 31 38.8

KSP Δ = 176km
Pg eZ 03 31 22.5
Sg eZ 31 43.0

NOV 13
GIG: φ = 50.215°N, λ = 19.067°E
H = 13:23:56.5, M = 2.4

OJC Δ = 52km
Pg eZ 13 24 05.7
Sg eN 24 12.5

KSP Δ = 209km
Pg eE 13 24 30.8
Sg eN 24 55.4

NOV 13
GIG: φ = 49.960°N, λ = 18.570°E
H = 14:52:01.1, M = 2.7

RAC Δ = 30km
Pg eZ 14 52 08.1
Sg eNE 52 12.7

OJC Δ = 92km
Pg eZ 14 52 17.5
Sg eEN 52 29.2

NIE Δ = 140km
Pg eZ 14 52 26.3

KSP Δ = 189km
Pg eZ 14 52 33.0
Sg eN 52 54.9

NOV 14
GIG: φ = 50.229°N, λ = 18.815°E
H = 15:04:36.9, M = 2.4

OJC Δ = 70km
Pg eZ 15 04 49.0
Sg eN 04 58.1

NIE Δ = 141km
Pg eZ 15 05 00.9
Sg eN 05 19.0

KSP Δ = 191km
Pg eZ 15 05 08.4
Sg eN 05 31.3

NOV 14
GIG: φ = 50.255°N, λ = 18.860°E
H = 19:36:40.4, M = 2.3

OJC Δ = 67km
Pg eZ 19 36 52.1
Sg eE 37 00.6

NIE Δ = 140km
Pg eZ 19 37 04.3
Sg eE 37 22.1

KSP Δ = 193km
Pg eZ 19 37 12.7
Sg eN 37 35.2

NOV 14
GIG: φ = 50.364°N, λ = 18.864°E
H = 20:57:08.8, M = 2.4

OJC Δ = 69km
Pg eZ 20 57 20.9
Sg eN 57 29.6

NIE Δ = 148km
Pg eZ 20 57 34.4
Sg eN 57 52.3

NOV 16
GIG: φ = 50.239°N, λ = 18.980°E
H = 17:20:53.9, M = 2.6

OJC Δ = 59km
Pg eZ 17 21 04.4
Sg eE 21 11.7

RAC Δ = 58km
Pg eZ 17 21 04.8
Sg eNE 21 12.5

NIE Δ = 132km
Pg eZ 17 21 17.0
Sg eE 21 33.6

KSP Δ = 202km
Pn eZ 17 21 25.1
Pg iZ 21 27.6
Sg eN 21 51.6

KWP Δ = 275km
Pn eZ 17 21 37.0
Pg eZ 21 43.2
Sg eNE 22 20.1

NOV 16
GIG: φ = 50.236°N, λ = 18.931°E
H = 17:59:24.2, M = 2.3

RAC Δ = 56km
Pg eZ 17 59 34.6
Sg eNE 59 42.1

OJC Δ = 62km
Pg eZ 17 59 35.0
Sg eE 59 43.1

NIE Δ = 135km
Pg eZ 17 59 47.7
Sg eN 18 00 05.4

KSP Δ = 198km
Pg eZ 17 59 57.2
Sg eN 18 00 21.1

NOV 16
GIG: φ = 50.266°N, λ = 18.882°E
H = 19:39:48.6, M = 2.4

RAC Δ = 54km
Pg eZ 19 39 58.2
Sg eNE 40 05.3

OJC Δ = 65km
Pg eZ 19 40 00.2
Sg eE 40 08.6

NIE Δ = 140km
Pg eZ 19 40 12.7
Sg eN 40 30.1

KSP Δ = 194km
Pg eZ 19 40 21.1
Sg eN 40 44.0

NOV 16
GIG: φ = 50.261°N, λ = 18.880°E
H = 21:52:34.9, M = 2.0

OJC Δ = 65km
Pg eZ 21 52 46.6
Sg eE 52 54.9

NIE Δ = 140km
Pg eZ 21 52 59.3
Sg eE 53 16.8

KSP Δ = 194km
Pg eZ 21 53 07.6
Sg eN 53 30.8

NOV 17
GIG: φ = 50.255°N, λ = 18.860°E
H = 16:44:02.7, M = 2.6

RAC Δ = 51km
Pg eZ 16 44 11.7
Sg eNE 44 18.2

OJC Δ = 67km
Pg eZ 16 44 14.6
Sg eE 44 23.0

NIE Δ = 140km
Pg eZ 16 44 27.0
Sg eE 44 44.8

KSP Δ = 193km
Pn eZ 16 44 34.2
Pg iZ 44 35.1
Sg eN 44 57.5

NOV 17
GIG: φ = 50.232°N, λ = 19.042°E
H = 18:24:27.7, M = 2.2

OJC Δ = 54km
Pg eZ 18 24 37.1
Sg eE 24 44.2

NIE Δ = 129km
Pg eZ 18 24 50.2
Sg eN 25 06.9

KSP Δ = 206km
Pg eZ 18 25 01.2
Sg eZ 25 26.3

NOV 18
GIG: φ = 50.363°N, λ = 18.865°E
H = 05:28:10.1, M = 2.2

OJC Δ = 68km
Pg eZ 05 28 22.5
Sg eE 28 31.0

NIE Δ = 148km
Pg eZ 05 28 36.4
Sg eN 28 54.3

KSP Δ = 189km
Pg eZ 05 28 41.6
Sg eN 29 03.9

NOV 18
GIG: φ = 50.234°N, λ = 19.043°E
H = 15:39:41.4, M = 2.5

OJC Δ = 54km
Pg eZ 15 39 50.9
Sg eE 39 57.8

NIE Δ = 129km
Pg eZ 15 40 03.8
Sg eN 40 20.4

KSP Δ = 206km
Pg eZ 15 40 16.0
Sg eE 40 39.4

NOV 19
GIG: φ = 50.066°N, λ = 18.460°E
H = 01:08:59.8, M = 2.3

RAC Δ = 19km
Pg iZ 01 09 04.0 D
Sg eNE 09 07.3

OJC Δ = 97km
Pg eZ 01 09 16.1
Sg eN 09 29.0

NIE Δ = 152km
Pg eZ 01 09 25.8
Sg eN 09 45.3

KSP Δ = 176km
Sg eZ 01 09 50.4

NOV 19
GIG: φ = 50.245°N, λ = 18.982°E
H = 01:36:32.6, M = 2.3

OJC Δ = 58km
Pg eZ 01 36 42.8
Sg iN 36 50.5

RAC Δ = 59km
Pg eZ 01 36 43.3
Sg eNE 36 51.2

NIE Δ = 133km
Pg eZ 01 36 55.8
Sg eE 37 12.3

KSP Δ = 201km
Pg eE 01 37 05.8
Sg eE 37 30.2

NOV 19
GIG: φ = 50.234°N, λ = 19.022°E
H = 03:11:40.9, M = 2.3

OJC Δ = 56km
Pg iZ 03 11 50.9
Sg iE 11 58.6

RAC Δ = 61km
Pg eZ 03 11 51.5
Sg eNE 11 59.7

NIE Δ = 130km
Pg eZ 03 12 03.9
Sg eN 12 20.5

KSP Δ = 204km
Pg eZ 03 12 14.3
Sg eE 12 39.0

NOV 22

GIG: φ = 50.207°N, λ = 19.072°E
H = 12:36:54.8, M = 2.3

OJC Δ = 51km
Pg eZ 12 37 04.0
Sg eE 37 10.7

KSP Δ = 209km
Pg eE 12 37 29.3
Sg eE 37 54.2

NOV 22

GIG: φ = 50.266°N, λ = 18.886°E
H = 18:51:23.3, M = 2.4

OJC Δ = 66km
Pg eZ 18 51 34.9
Sg eN 51 43.4

NIE Δ = 139km
Pg eZ 18 51 47.5
Sg eE 52 05.1

KSP Δ = 194km
Pg iZ 18 51 55.9 C
Sg eE 52 18.3

KWP Δ = 282km
Pg eZ 18 52 13.3

NOV 23

GIG: φ = 50.234°N, λ = 19.043°E
H = 11:29:42.5, M = 2.4

OJC Δ = 54km
Pg eZ 11 29 52.4
Sg eN 29 59.7

NIE Δ = 129km
Pg eZ 11 30 05.4
Sg eE 30 20.8

KSP Δ = 206km
Pg eE 11 30 17.0
Sg eN 30 40.7

NOV 23

φ = 49.94°N, λ = 18.53°E
H = 11:58:23.2, M = 2.3

OJC Δ = 96km
Pg eZ 11 58 40.1
Sg eN 58 52.4

NIE Δ = 141km
Pg eZ 11 58 46.9
Sg eE 59 05.3

KSP Δ = 188km
Pg eZ 11 58 54.3
Sg eE 59 17.0

NOV 24

φ = 50.26°N, λ = 18.94°E
H = 02:06:21.5, M = 2.2

RAC Δ = 57km
Pg eZ 02 06 31.7
Sg eNE 06 39.3

OJC Δ = 62km
Pg eZ 02 06 32.3
Sg eE 06 40.6

NIE Δ = 137km
Pg eZ 02 06 45.4
Sg eE 07 02.6

KSP Δ = 198km
Pg eZ 02 06 54.5
Sg eN 07 17.4

NOV 24

GIG: φ = 50.265°N, λ = 18.863°E
H = 02:16:15.2, M = 2.0

OJC Δ = 67km
Pg eZ 02 16 27.5
(Sg) eE 16 34.7

NIE Δ = 141km
Pg eZ 02 16 39.4
Sg eE 16 57.1

KSP Δ = 193km
Pg eZ 02 16 47.2
Sg eE 17 10.0

NOV 24

GIG: φ = 50.255°N, λ = 18.862°E
H = 15:38:49.3, M = 2.3

OJC Δ = 67km
Pg eZ 15 39 01.1
Sg eE 39 09.3

NIE Δ = 140km
(Pg) eZ 15 39 14.1
Sg eN 39 30.9

KSP Δ = 193km
Pg eZ 15 39 21.3
Sg eN 39 43.6

NOV 25

GIG: φ = 50.264°N, λ = 18.862°E
H = 00:15:15.8, M = 2.8

RAC	Δ = 52km		
	Pg eZ	00 15 25.4	
	Sg eNE	15 32.5	
OJC	Δ = 67km		
	Pg iZ	00 15 27.5	D
	Sg iN	15 36.1	
NIE	Δ = 141km		
	Pg eZ	00 15 39.7	
	Sg eN	15 57.5	
KSP	Δ = 193km		
	Pn eZ	00 15 46.2	
	Pg iZ	15 48.1	D
	Sg eE	16 11.2	
KWP	Δ = 284km		
	Pg eZ	00 16 05.1	

NOV 25

GIG: φ = 50.213°N, λ = 19.064°E
H = 16:45:12.6, M = 2.2

OJC	Δ = 52km		
	Pg eZ	16 45 21.6	
	Sg eE	45 28.0	
NIE	Δ = 126km		
	Pg eZ	16 45 35.2	
	Sg eE	45 50.8	
KSP	Δ = 208km		
	Pg eZ	16 45 47.0	
	Sg eE	46 11.8	

NOV 26

GIG: φ = 50.099°N, λ = 19.160°E
H = 01:02:44.6, M = 2.2

OJC	Δ = 47km		
	Pg eZ	01 02 52.7	
	Sg eN	02 58.8	
NIE	Δ = 112km		
	Pg eZ	01 03 03.6	
	(Sg) eE	03 19.3	
KSP	Δ = 220km		
	Pg eZ	01 03 21.8	
	Sg eN	03 46.4	

NOV 26

GIG: φ = 50.066°N, λ = 18.460°E
H = 01:46:41.5, M = 2.2

RAC	Δ = 19km		
	Pg iZ	01 46 45.7	D
	Sg eNE	46 49.0	
OJC	Δ = 97km		
	Pg eZ	01 46 58.3	
	Sg eN	47 10.8	
NIE	Δ = 152km		
	Pg eZ	01 47 08.0	
	Sg eE	47 26.6	

NOV 26

φ = 50.31°N, λ = 18.82°E
H = 15:15:22.4, M = 2.2

OJC	Δ = 70km		
	Pg eZ	15 15 34.6	
	Sg eE	15 42.9	
NIE	Δ = 146km		
	Pg eZ	15 15 47.7	
	(Sg) eE	16 04.8	
KSP	Δ = 189km		
	Pn eE	15 15 51.6	
	Pg eE	15 54.7	
	Sg eN	16 16.4	

NOV 27

GIG: φ = 50.208°N, λ = 19.071°E
H = 14:41:54.7, M = 2.2

OJC	Δ = 52km		
	Pg eZ	14 42 04.1	
	Sg eE	42 10.9	
NIE	Δ = 126km		
	Pg eZ	14 42 17.3	
	Sg eN	42 33.2	
KSP	Δ = 209km		
	Pg eZ	14 42 28.3	
	Sg eE	42 54.3	

NOV 27

GIG: φ = 50.266°N, λ = 18.882°E
H = 19:07:39.2, M = 2.5

RAC	Δ = 52km		
	Pg eZ	19 07 48.9	
	Sg eNE	07 55.5	

OJC Δ = 66km
Pg eZ 19 07 50.9
Sg eE 07 59.3

NIE Δ = 139km
Pg eZ 19 08 03.5
Sg eN 08 21.1

KSP Δ = 194km
Pg eZ 19 08 11.7
Sg eN 08 34.7

NOV 27
GIG: φ = 50.037°N, λ = 18.443°E
H = 23:13:55.6, M = 2.5

RAC Δ = 19km
Pg iZ 23 14 00.0 C
Sg eNE 14 03.1

OJC Δ = 99km
Pg eZ 23 14 12.5
Sg eE 14 24.5

NIE Δ = 151km
Pg eZ 23 14 22.1
Sg eE 14 40.8

KSP Δ = 177km
Pn eZ 23 14 24.1
Sg eE 14 45.7

NOV 28
GIG: φ = 50.255°N, λ = 18.860°E
H = 15:49:28.5, M = 2.4

OJC Δ = 67km
Pg eZ 15 49 40.3
Sg iE 49 48.7

NIE Δ = 140km
Pg eZ 15 49 52.7
Sg eE 50 10.8

KSP Δ = 193km
Pg eZ 15 50 00.7
Sg eN 50 23.4

NOV 28
GIG: φ = 50.234°N, λ = 19.042°E
H = 18:31:40.2, M = 2.1

OJC Δ = 54km
Pg eZ 18 31 49.4
Sg eE 31 56.4

NIE Δ = 129km
Pg eZ 18 32 02.6
Sg eE 32 19.1

KSP Δ = 206km
Pg eZ 18 32 14.1
Sg eE 32 38.9

NOV 29
GIG: φ = 50.232°N, λ = 19.042°E
H = 21:30:00.0, M = 2.2

OJC Δ = 54km
Pg eZ 21 30 09.1
Sg eE 30 16.3

NIE Δ = 129km
Pg eZ 21 30 22.3
Sg eN 30 38.9

KSP Δ = 206km
Pg eZ 21 30 33.9
Sg eN 30 58.0

NOV 30
GIG: φ = 50.260°N, λ = 18.895°E
H = 23:45:53.8, M = 2.1

OJC Δ = 64km
Pg eZ 23 46 04.7
Sg eE 46 13.1

NIE Δ = 138km
Pg eZ 23 46 17.4
Sg eE 46 35.3

KSP Δ = 195km
Pg eZ 23 46 26.0
Sn eZ 46 48.0
Sg eZ 46 49.7

DEC 1
GIG: φ = 50.255°N, λ = 18.862°E
H = 19:09:10.3, M = 2.8

RAC Δ = 52km
Pg eZ 19 09 19.9
Sg eNE 09 26.9

OJC Δ = 67km
Pg eZ 19 09 21.9
Sg eN 09 30.2

NIE Δ = 140km
Pg eZ 19 09 34.3
Sg eN 09 51.7

KSP Δ = 193km
Pn eZ 19 09 40.6
Pg iZ 09 42.5
Sg eE 10 04.7

KWP Δ = 284km
Pn eZ 19 09 58.2
Sg eNE 10 38.0

DEC 1
GIG: φ = 50.213°N, λ = 19.067°E
H = 21:41:31.5, M = 2.1

OJC Δ = 52km
Pg eZ 21 41 40.6
Sg eN 41 47.8

NIE Δ = 126km
Pg eZ 21 41 54.2
Sg eE 42 09.8

KSP Δ = 208km
Pg eZ 21 42 06.0
Sg eZ 42 30.4

DEC 1
GIG: φ = 50.256°N, λ = 18.859°E
H = 21:53:43.9, M = 2.3

OJC Δ = 67km
Pg eZ 21 53 55.7
Sg eE 54 04.3

NIE Δ = 140km
Pg eZ 21 54 08.0
Sg eE 54 25.6

KSP Δ = 193km
Pg eZ 21 54 15.9
Sg eN 54 38.3

DEC 4
GIG: φ = 50.257°N, λ = 18.903°E
H = 09:45:40.3, M = 2.1

OJC Δ = 64km
Pg eZ 09 45 51.5
Sg eE 45 59.7

NIE Δ = 138km
Pg eZ 09 46 04.1
Sg eN 46 21.6

KSP Δ = 196km
Pg eZ 09 46 12.5
Sg eZ 46 35.6

DEC 4
GIG: φ = 50.287°N, λ = 18.839°E
H = 10:12:13.3, M = 2.6

RAC Δ = 52km
Pg eZ 10 12 23.1
Sg eNE 12 29.7

OJC Δ = 68km
Pg eZ 10 12 25.5
Sg eN 12 33.6

NIE Δ = 144km
Pg eZ 10 12 37.9
Sg eN 12 55.6

KSP Δ = 190km
Pn eZ 10 12 42.9
Pg iZ 12 45.3
Sg eN 13 08.3

DEC 5
GIG: φ = 50.205°N, λ = 19.072°E
H = 16:22:45.0, M = 2.2

OJC Δ = 51km
Pg iZ 16 22 53.5
Sg eE 23 00.4

NIE Δ = 125km
Pg eZ 16 23 07.1
Sg eN 23 23.6

KSP Δ = 210km
Pg eZ 16 23 20.3
(Sg) eN 23 46.1

DEC 6
GIG: φ = 50.255°N, λ = 18.860°E
H = 04:52:25.2, M = 2.1

OJC Δ = 67km
Pg eZ 04 52 37.6
(Sg) eN 52 44.3

NIE Δ = 140km
Pg eZ 04 52 50.1
Sg eE 53 07.3

KSP Δ = 193km
Pg eZ 04 52 57.7
Sg eN 53 20.2

DEC 6
GIG: φ = 50.238°N, λ = 18.930°E
H = 10:11:32.3, M = 2.1

OJC Δ = 62km
Pg eZ 10 11 43.1
Sg eE 11 51.1

NIE Δ = 136km
Pg eZ 10 11 56.1
Sg eE 12 13.2

KSP Δ = 198km
Pg eZ 10 12 05.3
(Sg) eN 12 27.8

DEC 7
GIG: φ = 50.265°N, λ = 18.881°E
H = 15:56:20.6, M = 2.6

OJC Δ = 66km
Pg eZ 15 56 32.0
Sg eE 56 40.5

NIE Δ = 140km
Pg eZ 15 56 44.6
Sg eN 57 02.0

KSP Δ = 194km
Pg iZ 15 56 52.8 C
Sg eN 57 15.9

DEC 8
GIG: φ = 50.236°N, λ = 18.931°E
H = 11:59:20.6, M = 2.2

OJC Δ = 62km
Pg eZ 11 59 31.5
Sg eE 59 39.7

NIE Δ = 135km
Pg eZ 11 59 44.1
Sg eE 12 00 00.8

KSP Δ = 198km
Pg eE 11 59 53.3
Sg eN 12 00 17.1

DEC 9
GIG: φ = 50.255°N, λ = 18.860°E
H = 19:12:48.2, M = 2.6

RAC Δ = 52km
Pg eZ 19 12 58.0
Sg eNE 13 04.8

OJC Δ = 66km
Pg eZ 19 12 59.7
Sg eE 13 08.5

NIE Δ = 140km
Pg eZ 19 13 12.0
Sg eE 13 29.9

KSP Δ = 193km
Pg eZ 19 13 20.4
Sg eN 13 43.3

DEC 10
GIG: φ = 50.255°N, λ = 18.860°E
H = 04:04:50.9, M = 2.4

OJC Δ = 67km
Pg eZ 04 05 03.1
Sg eE 05 11.1

NIE Δ = 140km
Pg eZ 04 05 15.2
Sg eE 05 31.8

KSP Δ = 193km
Pg eE 04 05 23.2
Sg eN 05 45.8

DEC 13
GIG: φ = 50.266°N, λ = 18.882°E
H = 05:00:54.2, M = 2.2

OJC Δ = 66km
Pg eZ 05 01 05.5
Sg eN 01 14.4

NIE Δ = 139km
Pg eZ 05 01 18.3
Sg eN 01 35.4

KSP Δ = 194km
Pn eZ 05 01 25.5
Pg eZ 01 26.4
Sg eN 01 49.4

DEC 15
GIG: φ = 50.274°N, λ = 18.828°E
H = 00:51:08.2, M = 2.1

OJC Δ = 70km
Pg eZ 00 51 20.5
Sg eN 51 29.6

NIE Δ = 144km
Pg eZ 00 51 32.6
Sg eE 51 50.4

KSP Δ = 190km
Pn eZ 00 51 37.8
Pg iZ 51 39.6
Sg eN 52 02.6

DEC 15
GIG: φ = 50.274°N, λ = 19.266°E
H = 04:04:16.4, M = 2.5

OJC Δ = 38km
Pg iZ 04 04 23.0 D
Sg eN 04 28.3

NIE Δ = 121km
Pg eZ 04 04 36.9
Sg eN 04 52.5

KSP Δ = 220km
Pg eE 04 04 53.1
Sg eN 05 18.3

DEC 15
GIG: φ = 50.207°N, λ = 19.072°E
H = 04:37:03.8, M = 2.3

OJC Δ = 52km
Pg eZ 04 37 12.8
Sg eE 37 19.6

NIE Δ = 126km
Pg eZ 04 37 25.6
Sg eE 37 41.8

KSP Δ = 209km
Pg eZ 04 37 38.1
Sg eN 38 04.1

DEC 15
GIG: φ = 50.238°N, λ = 18.931°E
H = 12:07:25.5, M = 2.2

OJC Δ = 62km
Pg eZ 12 07 35.8
Sg eE 07 43.9

NIE Δ = 135km
Pg eZ 12 07 49.3
Sg eE 08 06.2

KSP Δ = 198km
Pg eZ 12 07 57.9
Sg eZ 08 22.1

DEC 16
φ = 50.28°N, λ = 18.90°E
H = 05:49:05.9, M = 2.1

OJC Δ = 64km
Pg eZ 05 49 17.8
Sg eE 49 25.7

NIE Δ = 139km
Pg eZ 05 49 29.7
Sg eN 49 47.4

KSP Δ = 195km
Pg eZ 05 49 37.6
Sg eE 50 01.3

DEC 16
GIG: φ = 50.266°N, λ = 18.882°E
H = 12:13:37.1, M = 2.2

OJC Δ = 66km
Pg eZ 12 13 48.5
Sg eN 13 57.0

NIE Δ = 139km
Pg eZ 12 14 00.9
Sg eE 14 18.8

KSP Δ = 194km
Pg eZ 12 14 09.3
Sg eN 14 32.4

DEC 18
GIG: φ = 50.238°N, λ = 19.071°E
H = 08:32:31.0, M = 2.2

OJC Δ = 52km
Pg eZ 08 32 39.9
Sg eN 32 47.4

NIE Δ = 128km
Pg eZ 08 32 53.3
Sg eN 33 09.6

KSP Δ = 208km
Pg eZ 08 33 04.5
Sg eN 33 29.5

DEC 19
GIG: φ = 50.271°N, λ = 19.262°E
H = 02:32:29.1, M = 2.9

OJC Δ = 39km
Pg iZ 02 32 36.0 D
Sg eN 32 41.4

RAC Δ = 78km
Pg eZ 02 32 42.8
Sg eNE 32 53.3

NIE Δ = 121km
Pg eZ 02 32 49.9
Sg eE 33 06.5

KSP Δ = 219km
Pn eZ 02 33 03.0
Pg eZ 33 05.8
Sg eN 33 31.4

KWP Δ = 257km
Pn eZ 02 33 11.3
Pg eZ 33 17.3
Sn eNE 33 42.7
Sg eNE 33 47.8

SUW Δ = 495km
Pn eZ 02 33 38.1
Sg eNE 34 56.6

DEC 19
GIG: φ = 50.060°N, λ = 18.434°E
H = 23:18:02.8, M = 2.2

RAC Δ = 17km
Pg iZ 23 18 06.6 D
Sg iN 18 09.7

OJC Δ = 99km
Pg eZ 23 18 19.5
Sg eN 18 32.1

NIE Δ = 153km
Pg iZ 23 18 29.3
Sg eE 18 49.0

DEC 20
GIG: φ = 50.266°N, λ = 18.882°E
H = 10:24:40.4, M = 2.3

OJC Δ = 66km
Pg eZ 10 24 52.1
Sg eE 25 00.6

NIE Δ = 139km
Pg eZ 10 25 04.3
Sg eE 25 21.8

KSP Δ = 194km
Pg eZ 10 25 12.3
Sg eN 25 35.2

DEC 20
GIG: φ = 50.266°N, λ = 18.867°E
H = 13:45:02.8, M = 2.5

OJC Δ = 66km
Pg eZ 13 45 14.5
Sg eN 45 23.1

NIE Δ = 141km
Pg eZ 13 45 27.0
Sg eE 45 45.2

KSP Δ = 193km
Pn eZ 13 45 32.7
Pg eZ 45 35.2
Sg eN 45 58.2

DEC 20
GIG: φ = 50.215°N, λ = 19.067°E
H = 18:14:45.6, M = 2.5

OJC Δ = 52km
Pg iZ 18 14 54.8 D
Sg eE 15 01.4

NIE Δ = 126km
Pg eZ 18 15 07.8
Sg eE 15 23.7

KSP Δ = 208km
Pg eE 18 15 20.2
Sg eE 15 44.8

DEC 20
GIG: φ = 50.099°N, λ = 19.162°E
H = 19:50:30.4, M = 2.4

OJC Δ = 47km
Pg eZ 19 50 38.8
Sg iN 50 44.6

NIE Δ = 112km
Pg eZ 19 50 49.6
Sg eE 51 04.8

DEC 21
GIG: φ = 50.215°N, λ = 19.064°E
H = 09:32:58.2, M = 2.2

OJC Δ = 52km
Pg eZ 09 33 07.3
Sg eN 33 14.2

NIE Δ = 126km
Pg eZ 09 33 20.8
Sg eN 33 36.5

KSP Δ = 208km
Pg eZ 09 33 33.5
Sg eN 33 57.3

DEC 22
GIG: φ = 50.236°N, λ = 18.931°E
H = 04:54:53.8, M = 2.3

OJC Δ = 62km
Pg eZ 04 55 04.8
Sg eN 55 12.5

NIE Δ = 135km
Pg eZ 04 55 17.4
Sg eE 55 34.1

KSP Δ = 199km
Pg eE 04 55 26.8
Sg eN 55 50.4

DEC 22
GIG: φ = 50.036°N, λ = 18.436°E
H = 08:39:38.0, M = 2.6

RAC Δ = 18km
Pg iZ 08 39 41.9 D
Sg eNE 39 45.2

OJC Δ = 99km
Pg eZ 08 39 54.9
Sg eE 40 07.4

NIE Δ = 152km
Pg eZ 08 40 04.3
Sg eE 40 23.7

KSP Δ = 176km
Pn eZ 08 40 05.9
Pg eZ 40 08.5
Sg eE 40 28.5

DEC 22
GIG: φ = 50.204°N, λ = 19.073°E
H = 16:51:39.7, M = 2.1

OJC Δ = 52km
Pg eZ 16 51 49.0
Sg eE 51 55.2

NIE Δ = 125km
Pg eZ 16 52 01.7
Sg eE 52 18.0

KSP Δ = 209km
Pg eZ 16 52 13.2
Sg eN 52 40.5

DEC 23
GIG: φ = 50.222°N, λ = 18.729°E
H = 00:11:01.7, M = 3.0

RAC Δ = 42km
Pg eZ 00 11 09.8
Sg eNE 11 15.3

OJC Δ = 76km
Pg iZ 00 11 15.1 C
Sg iN 11 25.1

NIE Δ = 145km
Pg iZ 00 11 26.3 C
Sg eE 11 44.6

KSP Δ = 186km
Pg iZ 00 11 31.9
Sn eE 11 53.3

DEC 23
GIG: φ = 50.255°N, λ = 18.862°E
H = 02:00:26.9, M = 2.6

RAC Δ = 52km
Pg eZ 02 00 36.4
Sg eNE 00 43.5

OJC Δ = 67km
Pg eZ 02 00 38.6
Sg eE 00 47.1

NIE Δ = 140km
Pg eZ 02 00 51.2
Sg eE 01 09.0

KSP Δ = 193km
Pn eZ 02 00 56.9
Pg iZ 00 59.1
Sg eN 01 21.5

DEC 23
GIG: φ = 50.099°N, λ = 19.204°E
H = 03:33:59.9, M = 2.1

OJC Δ = 44km
Pg eZ 03 34 07.4
Sg eNE 34 13.7

NIE Δ = 110km
Pg eZ 03 34 19.6
Sg eE 34 33.5

KSP Δ = 222km
Pg eZ 03 34 36.0
(Sg) eN 35 01.4

DEC 23
GIG: φ = 49.979°N, λ = 18.570°E
H = 05:29:21.7, M = 2.2

RAC Δ = 29km
Pg iZ 05 29 28.1 D
Sg eNE 29 32.5

OJC Δ = 92km
Pg eZ 05 29 37.7
Sg eE 29 49.0

NIE Δ = 140km
Pg eZ 05 29 46.4

KSP Δ = 188km
Pg eZ 05 29 53.3
Sg eE 30 16.1

DEC 23

GIG: φ = 50.266°N, λ = 18.882°E
H = 10:18:12.9, M = 2.2

OJC	Δ = 66km		
	Pg eZ	10 18 24.4	
	Sg eNE	18 32.8	
NIE	Δ = 140km		
	Pg eZ	10 18 37.5	
	Sg eN	18 54.3	
KSP	Δ = 194km		
	Pg eZ	10 18 45.2	
	Sg eN	19 07.8	

DEC 23

φ = 50.28°N, λ = 19.27°E
H = 11:40:53.8, M = 2.4

OJC	Δ = 38km		
	Pg eZ	11 41 00.1	
	Sg eN	41 05.4	
NIE	Δ = 122km		
	Pg eZ	11 41 15.3	
	Sg eE	41 30.5	
KSP	Δ = 220km		
	Pg eZ	11 41 30.4	
	Sg eN	41 55.5	

DEC 24

φ = 50.30°N, λ = 18.82°E
H = 01:03:17.8, M = 2.3

OJC	Δ = 70km		
	Pg eZ	01 03 30.2	
	Sg eE	03 39.1	
NIE	Δ = 145km		
	Pg eZ	01 03 42.7	
	Sg eE	04 00.4	
KSP	Δ = 189km		
	Pg eZ	01 03 48.5	
	Sg eN	04 11.9	

DEC 24

GIG: φ = 50.266°N, λ = 18.882°E
H = 04:58:13.8, M = 2.0

OJC	Δ = 66km		
	Pg eZ	04 58 25.7	
	Sg eN	58 34.1	
NIE	Δ = 140km		
	Pg eZ	04 58 38.2	
	Sg eN	58 55.2	
KSP	Δ = 194km		
	Pg eE	04 58 45.5	
	Sg eN	59 09.0	

DEC 24

GIG: φ = 50.366°N, λ = 18.881°E
H = 05:19:33.1, M = 2.4

OJC	Δ = 67km		
	Pg eZ	05 19 44.6	
	Sg eN	19 53.8	
NIE	Δ = 148km		
	Pg eZ	05 19 58.1	
	Sg eE	20 16.8	
KSP	Δ = 190km		
	Pg eZ	05 20 04.6	
	Sn eN	20 25.5	

DEC 24

GIG: φ = 50.262°N, λ = 18.932°E
H = 10:20:01.4, M = 2.2

OJC	Δ = 62km		
	Pg iZ	10 20 12.3	D
	Sg eN	20 20.3	
NIE	Δ = 137km		
	Pg eZ	10 20 25.1	
	Sg eE	20 42.1	
KSP	Δ = 198km		
	Pg eZ	10 20 34.1	
	Sg eN	20 57.8	

DEC 26

GIG: φ = 50.238°N, λ = 19.069°E
H = 20:18:19.1, M = 2.2

OJC	Δ = 52km		
	Pg eZ	20 18 28.2	
	Sg iN	18 35.7	
NIE	Δ = 128km		
	Pg eZ	20 18 41.2	
	Sg eN	18 57.3	
KSP	Δ = 208km		
	Pn eZ	20 18 51.3	
	Pg eZ	18 52.9	
	Sg eN	19 17.6	

DEC 27

GIG: φ = 50.262°N, λ = 18.897°E
H = 17:13:34.0, M = 2.6

OJC Δ = 65km
Pg iZ 17 13 45.5 D
Sg eZ 13 54.0

NIE Δ = 138km
Pg eZ 17 13 57.9
Sg eN 14 14.3

KSP Δ = 195km
Pg eZ 17 14 06.8
Sg eN 14 29.0

DEC 28

GIG: φ = 50.266°N, λ = 18.882°E
H = 07:00:11.0, M = 2.2

OJC Δ = 65km
Pg eZ 07 00 22.5
Sg eE 00 30.9

NIE Δ = 140km
Pg eZ 07 00 35.1
Sg eN 00 52.5

KSP Δ = 194km
Pg eZ 07 00 43.5
Sg eN 01 06.1

DEC 28

φ = 50.29°N, λ = 18.89°E
H = 15:50:21.9, M = 2.2

OJC Δ = 65km
Pg eZ 15 50 33.9
Sg eE 50 41.9

NIE Δ = 140km
Pg eZ 15 50 46.4
Sg eN 51 03.4

KSP Δ = 194km
Pg eZ 15 50 54.0
Sg eN 51 16.9

DEC 28

φ = 50.23°N, λ = 19.09°E
H = 22:16:40.8, M = 2.2

OJC Δ = 51km
Pg eZ 22 16 49.3
Sg eE 16 56.8

NIE Δ = 126km
Pg eZ 22 17 02.3
Sg eE 17 18.7

KSP Δ = 209km
Pg eZ 22 17 14.7
Sg eN 17 40.6

DEC 29

GIG: φ = 50.101°N, λ = 19.154°E
H = 05:34:37.5, M = 2.4

OJC Δ = 48km
Pg eZ 05 34 45.7
Sg eE 34 52.1

KSP Δ = 219km
Pg eE 05 35 13.2
Sn eE 05 35 37.8

DEC 29

GIG: φ = 50.254°N, λ = 18.860°E
H = 15:51:47.5, M = 2.4

OJC Δ = 67km
Pg eZ 15 51 59.2
Sg eE 52 07.6

KSP Δ = 193km
Pg eZ 15 52 19.8
Sg eEN 52 42.7

DEC 29

φ = 50.27°N, λ = 18.88°E
H = 23:14:22.8, M = 2.0

OJC Δ = 66km
Pg eZ 23 14 34.6
Sg eE 14 42.6

NIE Δ = 140km
Pg eZ 23 14 47.2
Sg eE 15 04.4

KSP Δ = 194km
Pg eZ 23 14 55.2
Sg eN 15 18.4

DEC 30

GIG: φ = 50.261°N, λ = 18.898°E
H = 17:09:42.6, M = 2.3

OJC Δ = 64km
Pg eZ 17 09 53.7
Sg eN 10 02.2

NIE Δ = 139km
Pg eZ 17 10 06.5
Sg eE 10 24.8

KSP Δ = 195km
Pg eZ 17 10 14.9
Sn eN 10 37.1

DEC 30

GIG: φ = 50.281°N, λ = 18.839°E
H = 18:47:02.7, M = 2.4

OJC Δ = 68km
Pg eZ 18 47 14.8
Sg eE 47 23.1

NIE Δ = 143km
Pg eZ 18 47 27.3
Sg eE 47 45.4

KSP Δ = 191km
Pg eZ 18 47 34.8
Sg eZ 47 57.3

DEC 31

GIG: φ = 50.090°N, λ = 18.439°E
H = 00:42:55.5, M = 2.2

RAC Δ = 17km
Pg iZ 00 42 59.5 C
Sg eNE 43 02.3

OJC Δ = 98km
Pg eZ 00 43 12.8
Sg eN 43 25.1

NIE Δ = 155km
Pg eZ 00 43 22.3
Sg eN 43 42.7

KSP Δ = 173km
Pg eZ 00 43 23.8

JAN 1

φ = 51.496°N, λ = 16.101°E
H = 06:32:57.4, M = 2.7

KSP Δ = 74.1km
Pg iNEZ 06 33 09.5
Sg eNEZ 33 18.4

OJC Δ = 297.3km
Pg eZ 06 33 46.7
Sg eN 34 22.1

JAN 1

φ = 51.44°N, λ = 16.19°E
H = 19:01:22, M = 2.7

KSP Δ = 67km
Pg eNZ 19 01 33.4
Sg eNEZ 01 41.4

OJC Δ = 289km
Pg eZ 19 02 12.4
Sg eE 02 46.0

JAN 3

φ = 51.461°N, λ = 16.107°E
H = 21:44:45.6, M = 2.6

KSP Δ = 70.2km
Pg eNEZ 21 44 57.1
Sg eNEZ 45 05.4

OJC Δ = 295.1km
Pg eZ 21 45 35.5
Sg eN 46 10.6

JAN 7

φ = 51.514°N, λ = 16.123°E
H = 02:19:03.2, M = 2.9

KSP Δ = 75.8km
Pg eNEZ 02 19 15.6
Sg eNEZ 19 24.8

OJC Δ = 296.8km
Pg eZ 02 19 53.6
Sg eN 20 28.6

JAN 7

φ = 51.555°N, λ = 16.096°E
H = 04:30:13.4, M = 3.7

KSP Δ = 80.6km
Pg iNEZ 04 30 26.6
Sg iNEZ 30 36.3

GKP Δ = 206.5km
Pn eZ 04 30 45.9
eZ 30 52.1
S eE 31 14.2

RAC Δ = 221.2km
Pn eZ 04 30 49.5
S eNE 31 15.4

OJC Δ = 300.6km
Pn eZ 04 30 56.3
Pg iZ 31 04.3
Sn eN 31 28.1
Sg iN 31 39.0

NIE Δ = 383.0km
Pn eZ 04 31 06.6
eZ 31 16.4
S eN 32 02.3

KWP Δ = 515.8km
Pn eZ 04 31 22.9
eZ 31 41.8
Sn eNE 32 20.6
S eNE 32 49.6

SUW Δ = 551.8km
Pg eZ 04 31 48.9

JAN 10

φ = 51.500°N, λ = 16.141°E
H = 14:41:04.9, M = 3.9

KSP Δ = 74.1km
Pg iNEZ 14 41 17.0
Sg eNEZ 41 26.1

GKP Δ = 211.1km
Pn eZ 14 41 37.8
Pg eZ 41 41.1
Sn eE 42 01.2

RAC Δ = 214.5km
P eZ 14 41 39.9
S eNE 42 05.6

OJC Δ = 295.0km
Pn eZ 14 41 45.5
Pg iZ 41 55.1
Sn eN 42 18.2
Sg iN 42 28.5

NIE Δ = 376.8km
P eZ 14 42 07.3
S eN 42 51.9

KWP Δ = 510.6km
Pn eZ 14 42 14.9
S eNE 43 35.2

SUW Δ = 552.5km
Pn eZ 14 42 19.1
Pg eZ 42 38.6
Sg eNE 43 16.7

JAN 11

φ = 51.405°N, λ = 16.208°E
H = 16:52:45.5, M = 2.7

KSP Δ = 63.0km
Pg eNEZ 16 52 55.8
Sg eNEZ 53 03.3

OJC Δ = 286.1km
Pg eZ 16 53 34.6
Sg eN 54 08.2

JAN 14

φ = 51.556°N, λ = 16.098°E
H = 08:05:34.6, M = 2.7

KSP Δ = 80.7km
Pg eNEZ 08 05 47.8
Sg eNEZ 05 57.4

OJC Δ = 300.6km
Pg eZ 08 06 24.4
Sg eNE 07 00.8

JAN 14

φ = 51.513°N, λ = 16.082°E
H = 09:47:19.5, M = 3.4

KSP Δ = 76.2km
Pg iNEZ 09 47 32.0
Sg eNEZ 47 40.8

RAC Δ = 218.4km
P eZ 09 47 55.9
S eNE 48 21.6

OJC Δ = 299.3km
Pg eZ 09 48 09.4
Sg eN 48 44.6

NIE Δ = 381.0km
P eZ 09 48 23.0
S eE 49 09.2

JAN 15

φ = 51.514°N, λ = 16.124°E
H = 18:44:40.7, M = 2.5

KSP Δ = 75.8km
Pg eNEZ 18 44 53.1
Sg eNEZ 45 02.1

OJC Δ = 296.8km
Pg eZ 18 45 31.0
Sg eN 46 06.0

JAN 15

φ = 51.513°N, λ = 16.124°E
H = 19:29:48.1, M = 3.4

KSP Δ = 75.7km
Pg eNEZ 19 30 00.5
Sg eNEZ 30 09.7

GKP Δ = 210.2km
P eZ 19 30 24.9

RAC Δ = 216.4km
P eZ 19 30 24.5
S eNE 30 50.0

OJC Δ = 296.7km
Pg eZ 19 30 36.8
Sg eN 31 12.6

NIE Δ = 378.7km
P eZ 19 30 51.4
S eE 31 37.4

KWP Δ = 512.3km
Pg eZ 19 31 12.2

JAN 16

φ = 51.453°N, λ = 16.088°E
H = 13:27:12.7, M = 2.3

KSP Δ = 69.6km
Pg eNEZ 13 27 24.1
Sg eNEZ 27 32.4

JAN 16

φ = 51.513°N, λ = 16.125°E
H = 15:08:10.1, M = 2.6

KSP Δ = 75.7km
Pg eNEZ 15 08 22.5
Sg eNEZ 08 31.5

OJC Δ = 296.7km
Pg eZ 15 09 00.0
Sg eN 09 34.7

JAN 18

φ = 51.472°N, λ = 16.023°E
H = 05:22:16.1, M = 2.6

KSP Δ = 72.7km
Pg eNEZ 05 22 28.0
Sg eNEZ 22 36.5

JAN 20

φ = 51.556°N, λ = 16.099°E
H = 03:09:56.3, M = 3.7

KSP Δ = 80.7km
Pg iNEZ 03 10 09.5
Sg iNEZ 10 19.1

RAC Δ = 221.1km
Pn eZ 03 10 28.9
Pg eZ 10 32.9
Sn eN 10 58.2

OJC Δ = 300.5km
Pn eZ 03 10 37.5
Pg iZ 10 46.9
Sn eN 11 11.6
Sg iN 11 21.8

NIE Δ = 382.9km
Pn eZ 03 10 43.3
eZ 10 59.6
S eE 11 43.3

JAN 23

φ = 51.453°N, λ = 16.085°E
H = 12:03:59.1, M = 2.3

KSP Δ = 69.6km
Pg eNEZ 12 04 10.5
Sg eNEZ 04 18.9

JAN 25

φ = 51.477°N, λ = 16.102°E
H = 04:46:50.7, M = 3.0

KSP Δ = 72.0km
Pg iNEZ 04 47 02.5
Sg eNEZ 47 11.0

GKP Δ = 214.5km
Pn eZ 04 47 23.4
eZ 47 25.2
Sn eE 47 53.3

RAC Δ = 214.6km
P eZ 04 47 26.2
S eNE 47 53.3

OJC Δ = 296.3km
Pg eZ 04 47 40.3
Sg eN 48 16.0

NIE Δ = 377.5km
P eZ 04 47 53.5
S eN 48 40.0

KWP Δ = 512.2km
Pg eZ 04 48 13.8

JAN 25

φ = 51.476°N, λ = 16.113°E
H = 04:47:54.9, M = 3.0

KSP Δ = 71.7km
Pg eNEZ 04 48 06.7
Sg eNEZ 48 15.1

OJC Δ = 295.5km
Pg eZ 04 48 45.2
Sg eN 49 18.7

NIE Δ = 376.8km
P eZ 04 48 57.6
S eN 49 42.5

JAN 25

φ = 51.406°N, λ = 16.240°E
H = 09:59:27.8, M = 2.6

KSP Δ = 62.9km
Pg eNEZ 09 59 38.1
Sg eNEZ 59 45.8

OJC Δ = 284.1km
Pg eZ 10 00 16.6
Sg eN 00 49.9

JAN 25

φ = 51.45°N, λ = 16.17°E
H = 16:53:40, M = 2.7

KSP Δ = 68km
Pg eNEZ 16 53 50.9
Sg eNEZ 53 59.6

JAN 26

φ = 51.540°N, λ = 16.060°E
H = 17:15:12.1, M = 2.6

KSP Δ = 79.5km
Pg eNEZ 17 15 25.1
Sg eNEZ 15 34.3

OJC Δ = 302.1km
Pg eZ 17 16 02.7
Sg eE 16 39.0

JAN 28

φ = 51.496°N, λ = 16.100°E
H = 02:03:17.8, M = 2.6

KSP Δ = 74.1km
Pg eNEZ 02 03 30.0
Sg eNEZ 03 38.9

OJC Δ = 297.3km
Pg eZ 02 04 07.6
Sg eN 04 42.6

JAN 29

φ = 51.450°N, λ = 16.167°E
H = 00:53:01.9, M = 2.6

KSP Δ = 68.3km
Pg iNEZ 00 53 13.1
Sg eNEZ 53 21.1

OJC Δ = 290.8km
Pg eZ 00 53 49.6
Sg eN 54 25.1

FEB 1

φ = 51.47°N, λ = 16.09°E
H = 05:16:10, M = 2.6

KSP Δ = 71km
Pg eN 05 16 21.8
Sg eN 16 29.4

OJC Δ = 297km
Pg eZ 05 16 58.8
Sg eN 17 35.3

FEB 1

φ = 51.449°N, λ = 16.171°E
H = 13:55:35.6, M = 2.6

KSP Δ = 68.2km
Pg eZ 13 55 46.8
Sg eE 55 54.8

FEB 2

φ = 51.543°N, λ = 16.131°E
H = 14:22:56.9, M = 2.6

KSP Δ = 78.9km
Pg eZ 14 23 09.8
Sg eE 23 19.2

OJC Δ = 297.9km
Pn eZ 14 23 38.5
Pg eZ 23 47.5
Sg eN 24 24.1

FEB 3

φ = 51.542°N, λ = 16.132°E
H = 10:12:38.3, M = 3.0

KSP Δ = 78.8km
Pg eZ 10 12 51.2
Sg eE 13 00.4

RAC Δ = 218.4km
P eZ 10 13 15.3
S eN 13 40.0

OJC Δ = 297.8km
Pn eZ 10 13 19.4
Pg iZ 13 28.7
Sg eN 14 02.8

NIE Δ = 380.1km
P eZ 10 13 39.3
S eN 14 25.1

FEB 3

φ = 51.537°N, λ = 16.025°E
H = 17:44:48.3, M = 3.0

KSP Δ = 79.7km
Pg iZ 17 45 01.4
Sg eE 45 11.1

RAC Δ = 223.1km
P eZ 17 45 25.7
S eN 45 52.0

OJC Δ = 304.1km
Pn eZ 17 45 31.6
Pg eZ 45 40.2
Sn eN 46 02.8
Sg eE 46 15.5

NIE Δ = 385.8km
P eZ 17 45 51.4
S eN 46 37.8

FEB 3

φ = 51.449°N, λ = 16.170°E
H = 22:47:01.5, M = 3.0

KSP Δ = 68.2km
Pg eZ 22 47 12.7
Sg eE 47 20.3

OJC Δ = 290.6km
Pn eZ 22 47 41.2
Pg eZ 47 51.1
Sn eN 48 13.0
Sg eN 48 25.6

NIE Δ = 371.9km
P eZ 22 48 01.8
S eE 48 45.7

FEB 4

φ = 51.561°N, λ = 16.007°E
H = 16:41:56.8, M = 3.0

KSP Δ = 82.6km
Pg eZ 16 42 10.3
Sg iE 42 20.3

OJC Δ = 306.4km
Pn eZ 16 42 39.6
Pg eZ 42 49.2
Sn eN 43 12.1
Sg eE 43 24.7

FEB 5

φ = 51.484°N, λ = 16.097°E
H = 16:43:34.6, M = 3.3

KSP Δ = 72.8km
Pg eZ 16 43 46.5
Sg eE 43 55.6

RAC Δ = 215.4km
P eZ 16 44 10.7
S eNE 44 35.9

OJC Δ = 296.9km
Pn eZ 16 44 14.0
Pg eZ 44 25.9
Sn eN 44 48.4
Sg eN 45 00.6

NIE Δ = 378.3km
P eZ 16 44 36.8
S eE 45 22.2

FEB 7

φ = 51.492°N, λ = 16.093°E
H = 00:13:10.4, M = 4.0

KSP Δ = 73.8km
Pg eZ 00 13 22.5
Sg eE 13 31.6

RAC Δ = 216.2km
Pn eZ 00 13 42.4
Pg eZ 13 45.8
Sn eNE 14 06.0
Sg eNE 14 11.3

GKP Δ = 213.2km
Pn eZ 00 13 43.0
Pg eZ 13 47.4
S eE 14 12.9

OJC Δ = 297.6km
Pn eZ 00 13 51.4
Pg iZ 14 00.1
Sn eN 14 23.4
Sg iN 14 36.3

NIE Δ = 379.0km
Pn eZ 00 14 01.4
eZ 14 12.3
S eN 14 58.2

KWP Δ = 513.4km
Pn eZ 00 14 19.4
Pg eZ 14 34.4

SUW Δ = 555.8km
Pg eZ 00 14 42.8
Sn eNE 15 22.0

FEB 7

φ = 51.514°N, λ = 16.123°E
H = 13:59:21.1, M = 2.7

KSP Δ = 75.8km
Pg eZ 13 59 33.5
Sg eE 59 42.9

FEB 9

φ = 51.503°N, λ = 16.092°E
H = 18:08:31.2, M = 2.9

KSP Δ = 75.0km
Pg iZ 18 08 43.5
Sg eE 08 52.5

OJC Δ = 298.2km
Pg eZ 18 09 20.8
Sg eE 09 56.8

NIE Δ = 379.8km
P eZ 18 09 33.5
S eE 10 19.5

FEB 11

φ = 51.470°N, λ = 16.032°E
H = 16:24:34.7, M = 2.4

KSP Δ = 72.3km
Pg eZ 16 24 46.5
Sg eE 24 55.3

FEB 11

φ = 51.54°N, λ = 16.06°E
H = 16:52:42, M = 2.7

KSP Δ = 79km
Pg eZ 16 52 55.0
Sg eE 53 02.0

OJC Δ = 302km
Pg eZ 16 53 32.3
Sg eE 54 07.8

FEB 13

φ = 51.511°N, λ = 16.060°E
H = 10:20:03.4, M = 2.7

KSP Δ = 76.3km
Pg eZ 10 20 15.9
Sg eN 20 24.6

OJC Δ = 300.6km
Pg eZ 10 20 55.1
Sg eN 21 29.7

FEB 14

φ = 51.506°N, λ = 16.033°E
H = 05:12:27.5, M = 2.9

KSP Δ = 76.2km
Pg eZ 05 12 40.0
Sg eE 12 48.8

OJC Δ = 302.0km
Pg eZ 05 13 17.7
Sg eN 13 53.9

NIE Δ = 383.3km
P eZ 05 13 30.5
S eN 14 15.5

FEB 14

φ = 51.555°N, λ = 16.098°E
H = 06:46:36.5, M = 2.9

KSP Δ = 80.6km
Pg eZ 06 46 49.7
Sg eE 46 59.4

OJC Δ = 300.5km
Pg eZ 06 47 28.0
Sg eN 48 02.6

NIE Δ = 382.9km
P eZ 06 47 41.6
S eE 48 26.2

FEB 16

φ = 51.512°N, λ = 15.996°E
H = 20:41:50.3, M = 3.3

KSP Δ = 77.5km
Pg eZ 20 42 03.0
Sg eE 42 10.5

RAC Δ = 222.5km
P eZ 20 42 26.3
S eNE 42 51.6

OJC Δ = 304.6km
Pn eZ 20 42 32.1
Pg iZ 42 42.2
Sg iN 43 17.8

NIE Δ = 385.8km
P eZ 20 42 53.2
S eE 43 39.2

FEB 17

φ = 51.477°N, λ = 16.111°E
H = 17:18:10.9, M = 3.4

KSP Δ = 71.9km
Pg eZ 17 18 22.7
Sg eE 18 31.6

RAC Δ = 214.1km
P eZ 17 18 46.9
S eNE 19 11.6

OJC Δ = 295.7km
Pn eZ 17 18 53.0
Pg eZ 19 01.5
Sn eN 19 24.1
Sg eE 19 37.9

NIE Δ = 377.0km
P eZ 17 19 12.7
S eN 19 58.5

KWP Δ = 511.6km
Pg eZ 17 19 34.7
Sn eNE 20 14.3

FEB 18

φ = 51.584°N, λ = 15.992°E
H = 06:54:49.0, M = 3.4

KSP Δ = 85.3km
Pg eZ 06 55 03.0
Sg eE 55 13.1

OJC Δ = 308.5km
Pn eZ 06 55 31.3
Pg iZ 55 41.2
Sn eN 56 03.6
Sg iN 56 16.8

NIE Δ = 390.8km
Pn eZ 06 55 42.1
eZ 55 52.4
S eE 56 39.8

FEB 18

φ = 51.497°N, λ = 16.101°E
H = 08:49:32.2, M = 2.7

KSP	Δ = 74.2km		
	Pg	eN	08 49 44.4
	Sg	eE	49 53.3
OJC	Δ = 297.3km		
	Pg	eZ	08 50 22.6
	Sg	eE	50 56.1

FEB 19

φ = 51.454°N, λ = 16.086°E
H = 21:14:27.1, M = 2.4

KSP	Δ = 69.7km		
	Pg	eZ	21 14 38.5
	Sg	eE	14 47.0

FEB 21

φ = 51.463°N, λ = 16.113°E
H = 14:22:50.7, M = 2.6

KSP	Δ = 70.3km		
	Pg	eZ	14 23 02.2
	Sg	eE	23 11.1
OJC	Δ = 294.9km		
	Pg	eZ	14 23 41.2
	Sg	eN	24 14.6

FEB 21

φ = 51.471°N, λ = 16.110°E
H = 17:20:46.4, M = 2.5

KSP	Δ = 71.2km		
	Pg	eZ	17 20 58.1
	Sg	eE	21 06.6

FEB 21

φ = 51.496°N, λ = 16.099°E
H = 20:47:57.8, M = 2.9

KSP	Δ = 74.1km		
	Pg	eZ	20 48 09.9
	Sg	eE	48 19.0
OJC	Δ = 297.4km		
	Pn	eZ	20 48 40.0
	Pg	eZ	48 47.4
	Sg	eN	49 22.6

FEB 22

φ = 51.519°N, λ = 16.114°E
H = 08:46:09.9, M = 3.2

KSP	Δ = 76.5km		
	Pg	eZ	08 46 22.4
	Sg	eE	46 31.5
GKP	Δ = 209.8km		
	P	eZ	08 46 44.2
	(Sn)	eE	47 07.2
RAC	Δ = 217.4km		
	P	eZ	08 46 47.3
	S	eNE	47 12.6
OJC	Δ = 297.7km		
	Pg	eZ	08 46 59.9
	Sg	eN	47 35.2
NIE	Δ = 379.6km		
	P	eZ	08 47 11.6
	S	eN	47 57.7
KWP	Δ = 513.2km		
	Pg	eZ	08 47 33.8
	S	eNE	48 42.1

FEB 25

φ = 51.540°N, λ = 16.058°E
H = 06:13:55.4, M = 3.2

KSP	Δ = 79.5km		
	Pg	eZ	06 14 08.4
	Sg	eE	14 17.8
RAC	Δ = 221.8km		
	P	eZ	06 14 32.3
	S	eNE	14 58.3
OJC	Δ = 302.2km		
	Pn	eZ	06 14 36.8
	Pg	eZ	14 46.9
	Sg	eN	15 22.0
NIE	Δ = 384.1km		
	P	eZ	06 14 32.3
	S	eNE	14 58.3

FEB 26

φ = 51.49°N, λ = 16.06°E
H = 04:47:56, M = 2.6

KSP	Δ = 74km		
	Pg	eZ	04 48 08.0
	Sg	eE	48 16.8

OJC Δ = 299km
Pg eZ 04 48 45.0
Sg eN 49 19.9

FEB 27

φ = 51.514°N, λ = 16.124°E
H = 14:04:07.3, M = 2.9

KSP Δ = 75.8km
Pg eZ 14 04 19.7
Sg eE 04 28.9

OJC Δ = 296.8km
Pg eZ 14 04 56.5
Sg eE 05 31.6

MAR 1

φ = 51.493°N, λ = 16.061°E
H = 06:33:51.5, M = 3.5

KSP Δ = 74.3km
Pg eZ 06 34 03.7
Sg eE 34 11.3

GKP Δ = 213.9km
(Pn) eZ 06 34 25.1
S eE 34 54.3

RAC Δ = 217.9km
P eZ 06 34 27.2
S eE 34 52.5

OJC Δ = 299.6km
Pn eZ 06 34 32.6
Pg iZ 34 41.3
Sn eN 35 05.0
Sg eE 35 16.6

NIE Δ = 380.9km
Pn eZ 06 34 43.1
eZ 34 53.3
S eN 35 38.5

KWP Δ = 515.5km
Pn eZ 06 35 00.6
Sn eNE 35 49.0
Sg eNE 36 21.3

SUW Δ = 557.6km
(Pg) eZ 06 35 30.8
Sn eNE 36 01.8
(Sg) eNE 36 25.6

MAR 1

φ = 51.524°N, λ = 16.115°E
H = 23:20:36.2, M = 2.7

KSP Δ = 77.0km
Pg eZ 23 20 48.8
Sg eE 20 58.1

OJC Δ = 297.9km
Pg eZ 23 21 24.7
Sg eN 22 00.9

MAR 5

φ = 51.557°N, λ = 16.099°E
H = 11:47:05.3, M = 2.6

KSP Δ = 80.8km
Pg eZ 11 47 18.5
Sg eE 47 28.1

OJC Δ = 300.6km
Pg eZ 11 47 56.5
Sg eN 48 31.9

MAR 8

φ = 51.520°N, λ = 16.113°E
H = 04:20:48.0, M = 2.8

KSP Δ = 76.6km
Pg eZ 04 21 00.6
Sg eE 21 10.1

OJC Δ = 297.8km
Pg eZ 04 21 37.4
Sg eN 22 12.1

MAR 8

φ = 51.537°N, λ = 16.027°E
H = 16:47:20.0, M = 2.4

KSP Δ = 79.7km
Pg eZ 16 47 33.1
Sg eE 47 42.7

MAR 8

φ = 51.453°N, λ = 16.080°E
H = 22:18:13.2, M = 2.9

KSP Δ = 69.7km
Pg eZ 22 18 24.6
Sg eE 18 33.0

RAC Δ = 213.8km
P eZ 22 18 49.3
S eN 19 14.4

OJC Δ = 296.4km
Pn eZ 22 18 52.9
Pg eZ 19 02.3
Sg eN 19 39.1

NIE Δ = 377.2km
P eZ 22 19 13.2
S eN 19 59.1

MAR 8

φ = 51.541°N, λ = 16.018°E
H = 23:17:43.5, M = 2.7

KSP Δ = 80.2km
Pg eZ 23 17 56.6
Sg eE 18 06.2

OJC Δ = 304.7km
Pg eZ 23 18 34.5
Sg eE 19 10.9

MAR 9

φ = 51.447°N, λ = 16.169°E
H = 22:01:13.4, M = 2.6

KSP Δ = 68.0km
Pg eZ 22 01 24.5
Sg eN 01 32.9

OJC Δ = 290.6km
Pg eZ 22 02 02.8
Sg eN 02 37.2

MAR 10

φ = 51.449°N, λ = 16.170°E
H = 04:53:37.9, M = 2.6

KSP Δ = 68.2km
Pg eZ 04 53 49.1
Sg eE 53 57.1

OJC Δ = 290.6km
Pg eZ 04 54 27.6
Sg eE 55 02.1

MAR 11

φ = 51.446°N, λ = 16.189°E
H = 05:12:13.3, M = 2.9

KSP Δ = 67.7km
Pg iZ 05 12 24.4
Sg eE 12 31.7

RAC Δ = 207.9km
P eZ 05 12 48.5
S eNE 13 13.1

OJC Δ = 289.3km
Pg eZ 05 13 02.6
Sg eE 13 37.0

NIE Δ = 370.6km
P eZ 05 13 15.3
S eN 13 59.3

MAR 13

φ = 51.500°N, λ = 16.088°E
H = 23:02:38.4, M = 2.8

KSP Δ = 74.7km
Pg eZ 23 02 50.7
Sg eE 02 59.6

OJC Δ = 298.3km
Pg eZ 23 03 29.4
Sg eN 04 04.0

MAR 17

φ = 51.501°N, λ = 16.092°E
H = 16:56:24.9, M = 2.6

KSP Δ = 74.8km
Pg eZ 16 56 37.2
Sg eE 56 46.2

OJC Δ = 298.1km
Pg eZ 16 57 14.6
Sg eE 57 50.5

MAR 18

φ = 51.510°N, λ = 16.061°E
H = 04:58:48.6, M = 2.4

KSP Δ = 76.2km
Pg eZ 04 59 01.1
Sg eE 59 09.7

MAR 18

φ = 51.517°N, λ = 16.118°E
H = 14:27:29.2, M = 3.6

KSP Δ = 76.2km
Pg iZ 14 27 41.7
Sg eE 27 51.0

RAC Δ = 217.0km
P eZ 14 28 05.5
S eNE 28 31.1

OJC Δ = 297.3km
Pg eZ 14 28 17.9
Sn eN 28 42.2
Sg eN 28 53.3

NIE Δ = 379.3km
P eZ 14 28 30.3
S eE 29 14.6

MAR 18

φ = 51.510°N, λ = 16.061°E
H = 20:58:17.7, M = 3.7

KSP Δ = 76.2km
Pg iZ 20 58 30.2
Sg eE 58 38.9

RAC Δ = 219.2km
Pn eZ 20 58 50.2
Pg eZ 58 53.4
Sg eNE 59 20.6

GKP Δ = 212.1km
Pn eZ 20 58 50.9
Pg eZ 58 54.0
Sg eNE 59 21.3

OJC Δ = 300.5km
Pn eZ 20 58 58.9
Pg iZ 59 07.7
Sg iN 59 43.4

NIE Δ = 382.0km
Pn eZ 20 59 09.5
eZ 59 19.8
S eN 21 00 05.7

KWP Δ = 516.2km
Pn eZ 20 59 26.7
Pg eZ 59 42.3
Sg eNE 21 00 44.4

MAR 20

φ = 51.447°N, λ = 16.169°E
H = 13:15:56.5, M = 2.7

KSP Δ = 68.0km
Pg eZ 13 16 07.6
Sg eE 16 15.9

OJC Δ = 290.6km
Pg eZ 13 16 45.0
Sg eN 17 19.9

MAR 20

φ = 51.483°N, λ = 16.097°E
H = 21:46:56.1, M = 2.4

KSP Δ = 72.7km
Pg eZ 21 47 08.0
Sg eE 47 16.7

MAR 21

φ = 51.492°N, λ = 16.058°E
H = 15:32:42.9, M = 2.4

KSP Δ = 74.3km
Pg eZ 15 32 55.1
Sg eE 33 04.1

MAR 23

φ = 51.46°N, λ = 16.13°E
H = 16:51:53, M = 3.3

KSP Δ = 70km
Pg eZ 16 52 04.6
Sg eE 52 12.1

RAC Δ = 212km
P eZ 16 52 28.5
S eN 52 53.0

OJC Δ = 294km
Pn eZ 16 52 34.0
Pg eZ 52 43.2
Sg eN 53 17.7

NIE Δ = 375km
P eZ 16 52 54.1
S eN 53 39.2

MAR 24

φ = 51.477°N, λ = 16.114°E
H = 05:00:57.1, M = 3.2

KSP Δ = 71.8km
Pg eZ 05 01 08.9
Sg eE 01 17.6

GKP Δ = 214.2km
P eZ 05 01 30.8
S eE 01 59.4

RAC Δ = 214.0km
P eZ 05 01 31.6
S eNE 01 57.1

OJC Δ = 295.5km
Pn eZ 05 01 38.6
Pg eZ 01 47.6
Sn eE 02 09.4
Sg eN 02 22.6

NIE Δ = 376.8km
P eZ 05 01 58.2
S eN 02 44.8

KWP Δ = 511.5km
Pg eZ 05 02 21.0
Sg eNE 03 25.8

MAR 29

φ = 51.538°N, λ = 16.056°E
H = 21:03:29.3, M = 2.7

KSP Δ = 79.3km
Pg eZ 21 03 42.3
Sg eE 03 51.7

OJC Δ = 302.2km
Pg eZ 21 04 20.8
Sg eN 04 56.4

MAR 29

φ = 51.537°N, λ = 16.057°E
H = 21:16:34.7, M = 2.7

KSP Δ = 79.2km
Pg eZ 21 16 47.7
Sg eE 16 57.1

OJC Δ = 302.1km
Pg eZ 21 17 26.2
Sg eN 18 01.9

MAR 31

φ = 51.448°N, λ = 16.170°E
H = 08:01:20.3, M = 3.0

KSP Δ = 68.1km
Pg eZ 08 01 31.5
Sg eE 01 39.6

OJC Δ = 290.6km
Pg eZ 08 02 10.1
Sg eE 02 44.4

NIE Δ = 371.8km
P eZ 08 02 23.2
S eE 03 06.6

MAR 31

φ = 51.496°N, λ = 16.101°E
H = 10:58:38.6, M = 2.9

KSP Δ = 74.1km
Pg eZE 10 58 50.8
Sg eE 58 59.7

OJC Δ = 297.3km
Pg eZ 10 59 28.0
Sg eN 11 00 03.3

APR 5

φ = 51.454°N, λ = 16.076°E
H = 18:56:53.3, M = 2.6

KSP Δ = 69.9km
Pg eZ 18 57 04.7
Sg eE 57 13.0

OJC Δ = 296.7km
Pg eZ 18 57 42.9
Sg eE 58 19.2

APR 6

φ = 51.470°N, λ = 16.109°E
H = 16:04:11.6, M = 2.8

KSP Δ = 71.1km
Pg eZ 16 04 23.3
Sg eE 04 31.8

NIE Δ = 377.5km
P eZ 16 05 12.6
S eE 05 57.0

APR 7

φ = 51.519°N, λ = 16.112°E
H = 07:19:06.3, M = 2.8

KSP Δ = 76.5km
Pg eZ 07 19 18.8
Sg eE 19 28.1

OJC Δ = 297.8km
Pg eZ 07 19 56.3
Sg eN 20 30.7

APR 11

φ = 51.450°N, λ = 16.167°E
H = 20:00:42.2, M = 2.2

KSP Δ = 68.3km
Pg eN 20 00 53.4
Sg eE 01 02.0

APR 11

φ = 51.448°N, λ = 16.171°E
H = 20:21:50.4, M = 2.3

KSP Δ = 68.1km
Pg eZ 20 22 01.6
Sg eN 22 09.8

APR 13

φ = 51.537°N, λ = 16.055°E
H = 18:12:53.6, M = 2.6

KSP Δ = 79.2km
Pg eZ 18 13 06.6
Sg eE 13 16.1

OJC Δ = 302.2km
Pg eZ 18 13 45.2
Sg eN 14 20.9

APR 14

φ = 51.449°N, λ = 16.170°E
H = 00:38:49.6, M = 2.4

KSP Δ = 68.2km
Pg eZ 00 39 00.8
Sg eE 39 08.9

APR 14

φ = 51.478°N, λ = 16.114°E
H = 03:57:18.3, M = 3.0

KSP Δ = 71.9km
Pg iZ 03 57 30.1
Sg eE 57 38.6

OJC Δ = 295.6km
Pg eZ 03 58 07.4
Sg eN 58 42.3

NIE Δ = 376.9km
P eZ 03 58 19.3
S eN 59 04.7

KWP Δ = 511.5km
Pg eZ 03 58 41.2
Sg eNE 59 45.7

APR 14

φ = 51.449°N, λ = 16.170°E
H = 20:55:14.8, M = 2.2

KSP Δ = 68.2km
Pg eZ 20 55 26.0
Sg eE 55 33.8

APR 15

φ = 51.456°N, λ = 16.095°E
H = 04:25:56.1, M = 2.7

KSP Δ = 69.8km
Pg eZ 04 26 07.5
Sg eE 26 16.0

OJC Δ = 295.6km
Pg eZ 04 26 44.3
Sg eN 27 20.3

APR 16

φ = 51.463°N, λ = 16.108°E
H = 08:51:34.9, M = 3.0

KSP Δ = 70.4km
Pg iZ 08 51 47.1
Sg eE 51 56.2

OJC Δ = 295.2km
Pn eZ 08 52 16.1
Pg eZ 52 25.1
Sg eNZ 53 00.7

NIE Δ = 376.3km
P eZ 08 52 37.5
S eE 53 26.0

KWP Δ = 511.3km
Pn eZ 08 52 47.6
Pg eZ 53 10.0

APR 18

φ = 51.449°N, λ = 16.170°E
H = 17:25:34.1, M = 2.4

KSP Δ = 68.2km
Pg eZ 17 25 45.3
Sg eE 25 53.6

APR 20

φ = 51.492°N, λ = 16.059°E
H = 04:08:58.3, M = 3.6

KSP Δ = 74.3km
Pg iZ 04 09 10.5
Sg iE 09 18.2

RAC Δ = 217.9km
P eZ 04 09 34.2
S eNE 09 59.4

OJC Δ = 299.7km
Pn eZ 04 09 39.5
Pg eZ 09 48.1
Sg eE 10 23.5

APR 22

φ = 51.540°N, λ = 16.017°E
H = 11:01:15.0, M = 2.5

KSP Δ = 80.1km
Pg iZ 11 01 28.1
Sg eE 01 37.7

APR 22

φ = 51.449°N, λ = 16.171°E
H = 16:16:27.8, M = 2.8

KSP Δ = 68.2km
Pg eZ 16 16 39.0
Sg eE 16 46.9

OJC Δ = 290.6km
Pg eZ 16 17 17.1
Sg eN 17 51.5

NIE Δ = 371.8km
P eZ 16 17 30.0
S eE 18 15.3

APR 23

φ = 51.403°N, λ = 16.208°E
H = 00:59:18.5, M = 2.4

KSP Δ = 62.8km
Pg eZ 00 59 28.8
Sg eE 59 36.2

APR 26

φ = 51.562°N, λ = 16.006°E
H = 05:34:59.0, M = 2.8

KSP Δ = 82.7km
Pg eZ 05 35 12.6
Sg iE 35 22.4

OJC Δ = 306.5km
Pg eZ 05 35 50.4
Sg eN 36 25.9

APR 28

φ = 51.518°N, λ = 16.115°E
H = 15:49:43.1, M = 2.4

KSP Δ = 76.3km
Pg eZ 15 49 55.6
Sg eE 50 05.0

APR 30

φ = 51.459°N, λ = 16.132°E
H = 15:33:08.0, M = 2.4

KSP Δ = 69.6km
Pg iZ 15 33 19.4
Sg eE 33 26.7

APR 30

φ = 51.496°N, λ = 16.100°E
H = 22:57:47.1, M = 2.7

KSP Δ = 74.1km
Pg eZ 22 57 59.2
Sg E 58 08.1

OJC Δ = 297.3km
Pg eZ 22 58 36.5
Sg eN 59 11.7

MAY 4

φ = 51.490°N, λ = 16.005°E
H = 15:13:06.3, M = 2.6

KSP Δ = 75.0km
Pg eZ 15 13 18.6
Sg eE 13 27.7

OJC Δ = 302.9km
Pg eZ 15 13 57.6
Sg eN 14 34.0

MAY 6

φ = 51.460°N, λ = 16.131°E
H = 03:41:44.4, M = 2.2

KSP Δ = 69.8km
Pg iN 03 41 55.8
Sg eE 42 03.0

MAY 8

φ = 51.514°N, λ = 16.123°E
H = 04:11:17.8, M = 3.1

KSP Δ = 75.8km
Pg eZ 04 11 30.2
Sg eE 11 39.5

GKP Δ = 210.1km
Pn eZ 04 11 50.5
Sn eE 12 26.5

RAC Δ = 216.5km
P eZ 04 11 53.9
S eNE 12 19.6

OJC Δ = 296.8km
Pn eZ 04 12 00.3
Pg eZ 12 08.1
Sn eE 12 31.2
Sg eN 12 42.9

NIE Δ = 378.8km
P eZ 04 12 20.2
S eN 13 05.3

KWP Δ = 512.4km
Pg eZ 04 12 41.6
Sg eNE 13 50.2

MAY 9

φ = 51.448°N, λ = 16.171°E
H = 14:32:25.5, M = 3.2

KSP Δ = 68.1km
Pg eZ 14 32 36.7
Sg eE 32 44.8

GKP Δ = 215.9km
Pn eZ 14 32 59.3
S eE 33 33.0

OJC Δ = 290.5km
Pg eZ 14 33 13.8
Sg eE 33 47.9

NIE Δ = 371.7km
P eZ 14 33 29.6
S eE 34 12.6

KWP Δ = 506.6km
Pn eZ 14 33 35.5
Sn eNE 34 34.1

MAY 17

φ = 51.531°N, λ = 16.091°E
H = 15:46:44.0, M = 2.4

KSP Δ = 78.1km
Pg eZ 15 46 56.8
Sg eE 47 06.0

MAY 19

φ = 51.491°N, λ = 16.058°E
H = 00:19:51.4, M = 2.9

KSP Δ = 74.2km
Pg iZ 00 20 03.6
Sg eE 20 12.5

OJC Δ = 299.7km
Pg eZ 00 20 42.0
Sg eE 21 17.5

MAY 20

φ = 51.496°N, λ = 16.096°E
H = 09:23:00.9, M = 2.7

KSP Δ = 74.2km
Pg eZ 09 23 13.1
Sg eE 23 22.3

OJC Δ = 297.6km
Pg eZ 09 23 51.0
Sg eN 24 25.7

MAY 21

φ = 51.540°N, λ = 16.016°E
H = 10:35:55.0, M = 2.7

KSP Δ = 80.1km
Pg eZ 10 36 08.1
Sg eE 36 17.7

OJC Δ = 304.8km
Pg eZ 10 36 46.2
Sg eE 37 22.3

MAY 22

φ = 51.471°N, λ = 16.098°E
H = 04:09:33.2, M = 2.8

KSP Δ = 71.4km
Pg iZ 04 09 44.9
Sg eE 09 53.0

RAC Δ = 214.3km
P eZ 04 10 08.2
S eNE 10 35.1

OJC Δ = 296.2km
Pg eZ 04 10 24.4
Sg eN 10 57.6

NIE Δ = 377.4km
P eZ 04 10 36.7
S eE 11 20.3

MAY 24

φ = 51.452°N, λ = 16.077°E
H = 04:29:39.6, M = 2.6

KSP Δ = 69.6km
Pg iZ 04 29 51.0
Sg eE 29 59.4

OJC Δ = 296.6km
Pg eZ 04 30 30.3
Sg eN 31 05.9

MAY 24

φ = 51.497°N, λ = 16.100°E
H = 04:41:49.0, M = 2.4

KSP Δ = 74.2km
Pg eZ 04 42 01.2
Sg eE 42 10.1

MAY 28

φ = 51.472°N, λ = 16.106°E
H = 15:32:53.5, M = 2.5

KSP Δ = 71.4km
Pg eZ 15 33 05.2
Sg eN 33 13.5

MAY 28

φ = 51.494°N, λ = 16.129°E
H = 20:23:55.4, M = 2.7

KSP Δ = 73.5km
Pg eZ 20 24 07.4
Sg eE 24 15.0

OJC Δ = 295.4km
Pg eZ 20 24 44.9
Sg eN 25 19.1

JUN 1

φ = 51.470°N, λ = 16.109°E
H = 16:02:22.3, M = 2.4

KSP Δ = 71.1km
Pg eZ 16 02 34.0
Sg eE 02 42.6

JUN 7

φ = 51.582°N, λ = 15.993°E
H = 03:59:37.4, M = 3.0

KSP Δ = 85.1km
Pg eZ 03 59 51.4
Sg eE 04 00 01.6

OJC Δ = 308.4km
Pg eZ 04 00 28.9
Sg eN 01 04.2

NIE Δ = 390.6km
P eZ 04 00 41.9
S eN 01 28.6

JUN 7

φ = 51.536°N, λ = 16.028°E
H = 15:51:44.5, M = 2.8

KSP Δ = 79.5km
Pg iZ 15 51 57.5
Sg eE 52 07.1

OJC Δ = 303.8km
Pg eZ 15 52 34.5
Sn eN 52 58.8
Sg eN 53 10.9

JUN 7

φ = 51.453°N, λ = 16.082°E
H = 22:42:13.5, M = 2.1

KSP Δ = 69.6km
Pg eZ 22 42 24.9
Sg eE 42 33.4

JUN 8

φ = 51.407°N, λ = 16.240°E
H = 02:29:36.4, M = 2.8

KSP Δ = 63.1km
Pg eZ 02 29 46.7
Sg eE 29 54.7

OJC Δ = 284.2km
Pg eZ 02 30 25.2
Sg eN 30 58.7

JUN 9

φ = 51.552°N, λ = 16.090°E
H = 03:39:46.7, M = 2.6

KSP Δ = 80.4km
Pg eZ 03 39 59.9
Sg eE 40 09.5

OJC Δ = 300.9km
Pg eZ 03 40 37.0
Sg eN 41 12.3

JUN 11

φ = 51.448°N, λ = 16.169°E
H = 15:34:45.9, M = 2.8

KSP Δ = 68.1km
Pg eZ 15 34 57.1
Sg eE 35 05.3

OJC Δ = 290.6km
Pg eZ 15 35 34.5
Sg eN 36 09.6

JUN 15

φ = 51.535°N, λ = 16.090°E
H = 03:27:32.7, M = 2.6

KSP Δ = 78.5km
Pg eZ 03 27 45.6
Sg eE 27 55.0

JUN 15

φ = 51.452°N, λ = 16.083°E
H = 06:09:37.7, M = 2.6

KSP Δ = 69.5km
Pg iZ 06 09 49.1
Sg eE 09 57.5

JUN 15

φ = 51.503°N, λ = 16.089°E
H = 15:39:32.1, M = 2.5

KSP Δ = 75.0km
Pg eZ 15 39 44.4
Sg eE 39 53.4

JUN 16

φ = 51.517°N, λ = 16.068°E
H = 14:33:14.5, M = 3.0

KSP Δ = 76.8km
Pg eZ 14 33 27.1
Sg iE 33 36.1

OJC Δ = 300.4km
Pg eZ 14 34 04.8
Sg eN 34 39.8

JUN 17

φ = 51.535°N, λ = 16.094°E
H = 03:52:31.0, M = 4.1

KSP Δ = 78.5km
Pg eZ 03 52 43.9
Sg eE 52 53.6

RAC Δ = 219.6km
Pn eZ 03 53 03.4
eZ 53 07.0
S eNE 53 33.3

OJC Δ = 299.7km
Pn eZ 03 53 12.7
Pg eZ 53 21.7
Sg eN 53 56.8

NIE Δ = 381.8km
Pn eZ 03 53 23.5
eZ 53 33.9
S eE 54 18.8

KWP Δ = 515.1km
Pn eZ 03 53 40.2
Pg eZ 53 55.5
S eNE 55 08.6

SUW Δ = 553.2km
Pn eZ 03 53 45.3
Pg eZ 54 04.7
Sg eNE 55 17.8

JUN 17

φ = 51.535°N, λ = 16.090°E
H = 03:56:12.8, M = 3.0

KSP Δ = 78.5km
Pg iZ 03 56 25.7
Sg eE 56 35.2

OJC Δ = 300.0km
Pg eZ 03 57 03.9
Sg eE 57 37.8

JUN 18

φ = 51.455°N, λ = 16.101°E
H = 04:07:54.3, M = 2.7

KSP Δ = 69.6km
Pg iZ 04 08 05.7
Sg eE 08 14.0

OJC Δ = 295.2km
Pn eZ 04 08 36.4
Pg eZ 08 44.6
Sg eN 09 19.3

JUN 19

φ = 51.513°N, λ = 16.081°E
H = 04:12:08.9, M = 2.6

KSP Δ = 76.2km
Pg eZ 04 12 21.4
Sg eE 12 30.7

OJC Δ = 299.4km
Pg eZ 04 12 59.3
Sg eN 13 35.1

JUN 19

φ = 51.541°N, λ = 16.130°E
H = 08:57:38.2, M = 3.0

KSP Δ = 78.7km
Pg iZ 08 57 51.1
Sg eE 58 00.2

RAC Δ = 218.4km
P eZ 08 58 14.6
S eNE 58 40.2

OJC Δ = 297.8km
Pn eZ 08 58 20.4
Pg eZ 58 28.9
Sg eE 59 04.1

JUN 21

φ = 51.538°N, λ = 16.057°E
H = 13:50:32.0, M = 3.0

KSP Δ = 79.3km
Pg eZ 13 50 45.0
Sg eE 50 54.4

RAC Δ = 221.6km
P eZ 13 51 09.1
S eNE 51 35.2

OJC Δ = 302.2km
Pn eZ 13 51 13.8
Pg iZ 51 23.5
Sn eE 51 45.5
Sg eN 51 59.1

NIE Δ = 384.1km
P eZ 13 51 35.7
S eE 52 20.4

JUN 21

φ = 51.582°N, λ = 15.992°E
H = 16:02:17.3, M = 3.2

KSP Δ = 85.1km
Pg eZ 16 02 31.3
Sg eE 02 41.5

RAC Δ = 228.3km
P eZ 16 02 55.6
S eNE 03 21.4

OJC Δ = 308.4km
Pn eZ 16 03 01.0
Pg eZ 03 09.4
Sg eN 03 45.2

NIE Δ = 390.6km
P eZ 16 03 22.0
S eE 04 08.2

JUN 22

φ = 51.446°N, λ = 16.188°E
H = 06:36:31.5, M = 3.3

KSP Δ = 67.7km
Pg iZ 06 36 42.6
Sg eE 36 49.9

RAC Δ = 207.9km
P eZ 06 37 06.4
S eNE 37 31.3

OJC Δ = 289.3km
Pn eZ 06 37 11.7
Pg eZ 37 21.0
Sn eN 37 42.7
Sg eN 37 55.4

NIE Δ = 370.6km
P eZ 06 37 33.1
S eN 38 18.9

KWP Δ = 505.4km
P eZ 06 37 47.4
Sg eNE 39 03.1

JUN 23

φ = 51.448°N, λ = 16.169°E
H = 03:45:38.0, M = 2.4

KSP Δ = 68.1km
Pg eZ 03 45 49.2
Sg eE 45 57.5

JUN 23

φ = 51.480°N, λ = 16.077°E
H = 06:30:18.0, M = 3.0

KSP Δ = 72.7km
Pg iZ 06 30 29.9
Sg eE 30 38.5

OJC Δ = 298.0km
Pg eZ 06 31 07.5
Sg eN 31 43.4

NIE Δ = 379.1km
P eZ 06 31 21.5
S eE 32 09.3

JUN 23

φ = 51.540°N, λ = 16.018°E
H = 22:09:00.6, M = 2.9

KSP Δ = 80.1km
Pg iZ 22 09 13.7
Sg eE 09 23.3

OJC Δ = 304.7km
Pg eZ 22 09 51.4
Sg eN 10 27.3

NIE Δ = 386.4km
P eZ 22 10 05.2
S eE 10 50.1

JUN 26

φ = 51.481°N, λ = 16.097°E
H = 03:34:39.1, M = 3.0

KSP	Δ = 72.5km		
	Pg iZ	03 34 51.0	
	Sg eE	34 59.4	
RAC	Δ = 215.1km		
	Pn eZ	03 35 10.1	
	eZ	35 13.8	
	S eNE	35 39.9	
OJC	Δ = 296.8km		
	Pg eZ	03 35 28.5	
	Sg eE	36 03.1	
NIE	Δ = 378.1km		
	P eZ	03 35 47.0	
	S eN	36 27.0	

JUN 26

φ = 51.447°N, λ = 16.133°E
H = 11:57:10.3, M = 2.6

KSP	Δ = 68.3km		
	Pg iZ	11 57 21.5	
	Sg eE	57 28.8	
OJC	Δ = 292.8km		
	Pg eZ	11 57 59.4	
	Sg eN	58 34.3	

JUN 27

φ = 51.446°N, λ = 16.117°E
H = 15:50:32.4, M = 3.1

KSP	Δ = 68.4km		
	Pg iZ	15 50 43.6	
	Sg eE	50 51.0	
RAC	Δ = 211.4km		
	P eZ	15 51 07.0	
	S eNE	51 32.2	
OJC	Δ = 293.8km		
	Pn eZ	15 51 13.4	
	Pg eZ	51 22.3	
	Sg eN	51 56.9	
NIE	Δ = 374.7km		
	P eZ	15 51 36.6	
	(S) eE	52 18.7	

JUN 28

φ = 51.449°N, λ = 16.171°E
H = 07:48:43.7, M = 2.8

KSP	Δ = 68.2km		
	Pg eZ	07 48 54.9	
	Sg eE	49 02.8	
OJC	Δ = 290.6km		
	Pg eZ	07 49 32.4	
	Sg eE	50 07.9	

JUN 28

φ = 51.536°N, λ = 16.030°E
H = 16:17:11.7, M = 2.4

KSP	Δ = 79.5km		
	Pg eZ	16 17 24.7	
	Sg eE	17 34.2	

JUN 29

φ = 51.450°N, λ = 16.167°E
H = 17:51:35.9, M = 2.7

KSP	Δ = 68.3km		
	Pg iZ	17 51 47.1	
	Sg eE	51 55.1	
OJC	Δ = 290.8km		
	Pg eZ	17 52 24.3	
	Sg eN	52 59.1	

JUN 29

φ = 51.447°N, λ = 16.120°E
H = 18:03:04.8, M = 2.9

KSP	Δ = 68.5km		
	Pg iZ	18 03 16.0	
	Sg eE	03 23.2	
RAC	Δ = 211.3km		
	P eZ	18 03 40.0	
	S eNE	04 04.4	
OJC	Δ = 293.6km		
	Pn eZ	18 03 45.5	
	Pg eZ	03 54.7	
	Sg eN	04 29.4	
NIE	Δ = 374.6km		
	P eZ	18 04 05.7	
	S eE	04 50.9	

JUN 30

φ = 51.460°N, λ = 16.131°E
H = 03:36:12.3, M = 2.8

KSP Δ = 69.8km
Pg iZ 03 36 23.7
Sg eE 36 31.1

OJC Δ = 293.6km
Pg eZ 03 37 01.2
Sg eN 37 37.8

JUL 1

φ = 51.518°N, λ = 16.112°E
H = 22:03:40.0, M = 2.9

KSP Δ = 76.4km
Pg eZ 22 03 52.5
Sg eE 04 01.7

RAC Δ = 217.4km
P eZ 22 04 17.0
S eNE 04 42.8

OJC Δ = 297.7km
Pg eZ 22 04 30.1
Sg eE 05 04.6

JUL 1

φ = 51.520°N, λ = 16.111°E
H = 22:04:07.4, M = 3.0

KSP Δ = 76.6km
Pg eZ 22 04 20.0
Sg eE 04 28.6

RAC Δ = 217.6km
P eZ 22 04 41.9
S eN 05 06.4

OJC Δ = 297.9km
Pg eZ 22 04 57.6
Sg eE 05 32.1

NIE Δ = 379.7km
P eZ 22 05 13.8
S eE 05 56.7

JUL 4

φ = 51.449°N, λ = 16.118°E
H = 05:42:25.5, M = 3.2

KSP Δ = 68.7km
Pg iZ 05 42 36.8 D
Sg eE 42 44.1

RAC Δ = 211.6km
P eZ 05 43 00.0
S eNE 43 25.1

OJC Δ = 293.9km
Pn eZ 05 43 06.5
Pg eZ 43 15.5
Sg eN 43 49.7

NIE Δ = 374.8km
P eZ 05 43 27.5
S eN 44 12.0

JUL 5

φ = 51.46°N, λ = 16.13°E
H = 15:49:16, M = 2.7

KSP Δ = 70km
Pg eZ 15 49 27.0
Sg eE 49 34.2

OJC Δ = 294km
Pg eZ 15 50 05.2
Sg eN 50 40.1

JUL 6

φ = 51.491°N, λ = 16.058°E
H = 03:53:11.0, M = 2.4

KSP Δ = 74.2km
Pg eZ 03 53 23.2
Sg eE 53 32.0

JUL 7

φ = 51.459°N, λ = 16.130°E
H = 15:59:36.0, M = 2.9

KSP Δ = 69.7km
Pg iZ 15 59 47.4
Sg eE 59 55.0

OJC Δ = 293.6km
Pg eZ 16 00 25.6
Sg eE 00 59.5

NIE Δ = 374.8km
P eZ 16 00 38.7
S eN 01 22.3

JUL 7

φ = 51.449°N, λ = 16.172°E
H = 22:04:50.3, M = 2.5

KSP Δ = 68.2km
Pg eZ 22 05 01.5
Sg eE 05 09.5

OJC Δ = 290.5km
Pg eZ 22 05 39.8
Sg eE 06 13.2

JUL 13

φ = 51.537°N, λ = 16.028°E
H = 03:59:26.5, M = 3.4

KSP Δ = 79.6km
Pg iZ 03 59 39.5 D
Sg iE 59 49.0

RAC Δ = 223.0km
Pn eZ 03 59 59.1
eZ 04 00 02.9
S eNE 00 29.4

OJC Δ = 303.9km
Pn eZ 04 00 08.1
Pg eZ 00 16.9
Sn eN 00 40.9
Sg eN 00 53.0

NIE Δ = 385.6km
Pn eZ 04 00 20.1
eZ 00 30.2
S eE 01 15.5

KWP Δ = 519.5km
Pn eZ 04 00 35.4
Pg eZ 00 51.3
S eNE 01 53.1

JUL 13

φ = 51.534°N, λ = 16.024°E
H = 05:37:16.0, M = 2.8

KSP Δ = 79.4km
Pg eZ 05 37 29.0
Sg iE 37 38.5

OJC Δ = 304.0km
Pg eZ 05 38 07.2
Sg eE 38 43.1

JUL 13

φ = 51.506°N, λ = 16.092°E
H = 16:44:04.2, M = 2.7

KSP Δ = 75.3km
Pg eZ 16 44 16.5
Sg eE 44 25.6

OJC Δ = 298.3km
Pg eZ 16 44 53.0
Sg eN 45 29.2

JUL 14

φ = 51.447°N, λ = 16.166°E
H = 07:28:37.6, M = 2.6

KSP Δ = 68.0km
Pg eZ 07 28 48.8
Sg eE 28 56.7

JUL 15

φ = 51.473°N, λ = 16.105°E
H = 03:45:43.4, M = 2.7

KSP Δ = 71.5km
Pg iZ 03 45 55.1
Sg iE 46 03.6

OJC Δ = 295.9km
Pg eZ 03 46 33.5
Sg eE 47 08.5

JUL 16

φ = 51.480°N, λ = 16.079°E
H = 03:45:22.3, M = 2.9

KSP Δ = 72.6km
Pg iZ 03 45 34.2 D
Sg eE 45 42.7

OJC Δ = 297.8km
Pn eZ 03 46 03.5
Pg eZ 46 13.0
Sg eN 46 47.7

JUL 19

φ = 51.517°N, λ = 16.117°E
H = 03:31:58.7, M = 4.0

KSP Δ = 76.2km
Pg iZ 03 32 11.2
Sg eE 32 20.2

RAC Δ = 217.1km
Pn eZ 03 32 30.6
eZ 32 34.7
Sn eE 32 54.6
eNE 33 00.9

OJC Δ = 297.4km
Pn eZ 03 32 39.9
Pg iZ 32 49.6
Sg iN 33 24.0

NIE Δ = 379.3km
Pn eZ 03 32 52.0
Pg eZ 33 02.4
Sg eE 33 47.2

KWP Δ = 512.9km
Pn eZ 03 33 08.3
Pg eZ 33 22.5
(S) eNE 34 35.7

SUW Δ = 552.9km
Pn eZ 03 33 12.8
Pg eZ 33 31.5
Sn eNE 34 10.3
Sg eNE 34 40.2

JUL 19

φ = 51.531°N, λ = 16.138°E
H = 08:20:49.6, M = 2.8

KSP Δ = 77.5km
Pg iZ 08 21 02.3
Sg eE 21 11.6

OJC Δ = 296.8km
Pg eZ 08 21 38.9
Sg eN 22 14.1

NIE Δ = 379.1km
P eZ 08 21 55.5
S eE 22 38.0

JUL 21

φ = 51.524°N, λ = 16.108°E
H = 22:23:59.1, M = 2.5

KSP Δ = 77.1km
Pg eZ 22 24 11.7
Sg eE 24 21.1

OJC Δ = 298.3km
Pg eZ 22 24 49.2
Sg eN 25 24.1

JUL 22

φ = 51.557°N, λ = 16.101°E
H = 15:02:07.4, M = 2.7

KSP Δ = 80.8km
Pg iZ 15 02 20.7 D
Sg iE 02 30.3

OJC Δ = 300.4km
Pg eZ 15 02 58.5
Sg eE 03 34.3

JUL 24

φ = 51.449°N, λ = 16.170°E
H = 16:05:32.0, M = 3.0

KSP Δ = 68.2km
Pg eZ 16 05 43.2
Sg eN 05 51.5

JUL 24

φ = 51.491°N, λ = 16.058°E
H = 18:07:33.8, M = 2.5

KSP Δ = 74.2km
Pg eZ 18 07 46.0
Sg eN 07 54.7

JUL 30

φ = 51.542°N, λ = 16.014°E
H = 05:59:05.2, M = 2.9

OJC Δ = 305.0km
Pg eZ 05 59 57.0
Sg eN 06 00 32.9

JUL 31

φ = 51.480°N, λ = 16.080°E
H = 09:51:42.9, M = 2.8

KSP Δ = 72.6km
Pg iZ 09 51 54.8
Sg eE 52 03.1

OJC Δ = 297.8km
Pg eZ 09 52 32.2
Sg eN 53 08.3

NIE Δ = 379.0km
P eZ 09 52 45.7
S eE 53 30.4

AUG 3

φ = 51.496°N, λ = 16.101°E
H = 06:09:50.1, M = 2.8

KSP Δ = 74.1km
Pg eZ 06 10 02.3
Sg eE 10 11.6

OJC Δ = 297.3km
Pg eZ 06 10 39.8
Sg eN 11 15.5

NIE Δ = 378.8km
P eZ 06 10 51.9
S eN 11 35.6

AUG 4

φ = 51.485°N, λ = 16.096°E
H = 22:21:08.6, M = 2.3

KSP Δ = 72.9km
Pg eZ 22 21 20.6
Sg eE 21 29.2

AUG 5

φ = 51.455°N, λ = 16.099°E
H = 13:53:25.2, M = 2.6

KSP	Δ = 69.6km		
	Pg	eZ	13 53 36.6
	Sg	eE	53 45.4
OJC	Δ = 295.3km		
	Pg	eZ	13 54 15.3
	Sg	eN	54 50.2

AUG 5

φ = 51.507°N, λ = 16.092°E
H = 16:32:39.4, M = 3.8

KSP	Δ = 75.4km		
	Pg	iZ	16 32 51.8 D
	Sg	eE	33 00.9
RAC	Δ = 217.5km		
	Pn	eZ	16 33 11.6
		eZ	33 15.1
	Sn	eE	33 35.2
		eNE	33 41.6
GKP	Δ = 211.6km		
	Pn	eZ	16 33 12.7
	Pg	eZ	33 20.1
	(S)	eE	33 40.1
OJC	Δ = 298.4km		
	Pn	eZ	16 33 20.8
	Pg	eZ	33 28.5
	Sg	eN	34 03.9
NIE	Δ = 380.1km		
	Pn	eZ	16 33 32.8
		eZ	33 42.8
	S	eN	34 27.4

AUG 6

φ = 51.454°N, λ = 16.078°E
H = 07:23:34.3, M = 2.6

KSP	Δ = 69.8km		
	Pg	iZ	07 23 45.7 D
	Sg	eE	23 54.0
OJC	Δ = 296.6km		
	Pg	eZ	07 24 23.7
	Sg	eN	24 59.2

AUG 7

φ = 51.582°N, λ = 15.992°E
H = 08:24:55.9, M = 2.7

KSP	Δ = 85.1km		
	Pg	iZ	08 25 09.9 D
	Sg	eE	25 20.0
OJC	Δ = 308.4km		
	Pg	eZ	08 25 47.5
	Sg	eN	26 22.6

AUG 9

φ = 51.450°N, λ = 16.172°E
H = 15:44:00.6, M = 2.4

KSP	Δ = 68.3km		
	Pg	eZ	15 44 11.8
	Sg	eE	44 19.7

AUG 11

φ = 51.450°N, λ = 16.172°E
H = 00:04:16.2, M = 2.2

KSP	Δ = 68.3km		
	Pg	eZ	00 04 27.4
	Sg	eE	04 35.3

AUG 11

φ = 51.484°N, λ = 16.095°E
H = 05:24:22.5, M = 3.5

KSP	Δ = 72.8km		
	Pg	iZ	05 24 34.4 C
	Sg	eE	24 43.3
RAC	Δ = 215.5km		
	P	eZ	05 24 58.3
	S	eNE	25 23.8
GKP	Δ = 213.9km		
	P	eZ	05 25 03.4
OJC	Δ = 297.0km		
	Pn	eZ	05 25 03.4
	Pg	iZ	25 12.3
	Sn	eN	25 33.6
	Sg	iE	25 48.0
NIE	Δ = 378.4km		
	Pn	eZ	05 25 15.8
		eZ	25 25.5
	S	eE	26 10.1
KWP	Δ = 513.0km		
	(Pn)	eZ	05 25 26.6
	Pg	eZ	25 46.3
	S	eNE	26 19.9

AUG 11

φ = 51.485°N, λ = 16.094°E
H = 05:43:56.6, M = 2.7

KSP Δ = 73.0km
Pg eZ 05 44 08.6
Sg eE 44 17.3

OJC Δ = 297.2km
Pg eZ 05 44 47.8
Sg eN 45 21.4

AUG 11

φ = 51.483°N, λ = 16.095°E
H = 06:36:22.2, M = 2.7

KSP Δ = 72.7km
Pg eZ 06 36 34.1 D
Sg eE 36 42.4

OJC Δ = 297.0km
Pg eZ 06 37 12.8
Sg eN 37 47.6

AUG 11

φ = 51.447°N, λ = 16.170°E
H = 15:47:24.4, M = 2.3

KSP Δ = 68.0km
Pg eZ 15 47 35.5
Sg eE 47 43.5

AUG 11

φ = 51.524°N, λ = 16.115°E
H = 17:53:49.9, M = 2.4

KSP Δ = 77.0km
Pg eZ 17 54 02.5 C
Sg eE 54 11.7

AUG 12

φ = 51.520°N, λ = 16.111°E
H = 03:01:38.1, M = 3.1

KSP Δ = 76.6km
Pg iZ 03 01 50.7 D
Sg eE 02 00.0

RAC Δ = 217.6km
P eZ 03 02 15.7
S eNE 02 39.9

GKP Δ = 209.8km
Pn eZ 03 02 17.1
eZ 02 20.4
Sn eNE 02 40.0

OJC Δ = 297.9km
Pg iZ 03 02 27.8
Sg iE 03 04.1

NIE Δ = 379.8km
Pn eZ 03 02 41.4
S eE 03 26.2

KWP Δ = 513.4km
Pg eZ 03 03 02.1
S eNE 04 12.9

AUG 12

φ = 51.477°N, λ = 16.114°E
H = 17:31:20.4, M = 3.3

KSP Δ = 71.8km
Pg iZ 17 31 32.2 D
Sg eE 31 40.7

RAC Δ = 214.0km
P eZ 17 31 55.4
S eNE 32 20.1

OJC Δ = 295.5km
Pg eZ 17 32 08.7
Sg eN 32 43.7

NIE Δ = 376.8km
P eZ 17 32 22.1
S eN 33 06.7

AUG 13

φ = 51.541°N, λ = 16.131°E
H = 20:27:02.6, M = 3.2

KSP Δ = 78.7km
Pg iZ 20 27 15.5 D
Sg eN 27 24.7

RAC Δ = 218.4km
P eZ 20 27 39.0
S eNE 28 04.4

OJC Δ = 297.8km
Pg eZ 20 27 51.1
Sg eN 28 27.2

NIE Δ = 380.1km
P eZ 20 28 06.5
S eN 28 50.0

AUG 14

φ = 51.449°N, λ = 16.171°E
H = 12:30:17.4, M = 2.2

KSP Δ = 68.2km
Pg eZ 12 30 28.6
Sg eE 30 36.4

AUG 15

φ = 51.450°N, λ = 16.166°E
H = 05:14:55.0, M = 2.6

KSP Δ = 68.3km
Pg iZ 05 15 06.2 C
Sg eE 15 14.2

OJC Δ = 290.9km
Pg eZ 05 15 43.4
Sg eN 16 18.3

AUG 17

φ = 51.448°N, λ = 16.172°E
H = 03:43:20.9, M = 3.1

KSP Δ = 68.0km
Pg iZ 03 43 32.1 D
Sg eE 43 40.3

RAC Δ = 208.9km
P eZ 03 43 56.8
S eNE 44 22.1

OJC Δ = 290.4km
Pg eZ 03 44 09.7
Sg eE 44 43.5

KWP Δ = 506.5km
Pg eZ 03 44 44.9
S eNE 45 48.6

AUG 18

φ = 51.546°N, λ = 16.052°E
H = 03:30:32.1, M = 2.3

KSP Δ = 80.2km
Pg eZ 03 30 45.3
Sg eE 30 54.9

AUG 18

φ = 51.539°N, λ = 16.011°E
H = 23:03:41.3, M = 2.2

KSP Δ = 80.1km
Pg eZ 23 03 54.4
Sg eE 04 04.2

AUG 19

φ = 51.484°N, λ = 16.097°E
H = 04:07:21.3, M = 2.4

KSP Δ = 72.8km
Pg eZ 04 07 33.2
Sg eE 07 42.0

AUG 19

φ = 51.483°N, λ = 16.098°E
H = 09:04:20.3, M = 3.1

KSP Δ = 72.7km
Pg iZ 09 04 32.2 D
Sg eE 04 40.9

OJC Δ = 296.8km
Pg eZ 09 05 10.1
Sg eE 05 45.1

AUG 20

φ = 51.467°N, λ = 16.108°E
H = 03:28:15.3, M = 2.7

KSP Δ = 70.8km
Pg iZ 03 28 26.9 D
Sg eE 28 35.4

OJC Δ = 295.4km
Pg eZ 03 29 05.5
Sg eN 29 41.3

AUG 20

φ = 51.467°N, λ = 16.109°E
H = 04:22:40.2, M = 2.7

KSP Δ = 70.8km
Pg iZ 04 22 51.8 D
Sg eE 23 00.2

OJC Δ = 295.3km
Pg eZ 04 23 30.1
Sg eE 24 04.8

AUG 20

φ = 51.491°N, λ = 16.005°E
H = 05:39:14.5, M = 2.6

KSP Δ = 75.1km
Pg eZ 05 39 26.8
Sg eE 39 35.8

OJC Δ = 303.0km
Pg eZ 05 40 05.0
Sg eN 40 41.8

AUG 25

φ = 51.45°N, λ = 16.10°E
H = 04:11:24, M = 3.2

KSP Δ = 69km
Pg iZ 04 11 35.6 D
Sg eE 11 44.2

RAC Δ = 212km
P eZ 04 11 59.6
S eNE 12 24.2

OJC Δ = 295km
Pg eZ 04 12 14.5
Sg eN 12 49.2

NIE Δ = 376km
P eZ 04 12 26.1
S eN 13 10.8

KWP Δ = 511km
Pg eZ 04 12 49.1
S eNE 13 55.7

AUG 25

φ = 51.453°N, λ = 16.076°E
H = 14:54:07.7, M = 2.6

KSP Δ = 69.7km
Pg iZ 14 54 19.1 D
Sg eE 54 27.3

AUG 25

φ = 51.471°N, λ = 16.108°E
H = 16:11:10.1, M = 2.3

KSP Δ = 71.3km
Pg eZ 16 11 21.8
Sg eE 11 30.3

AUG 26

φ = 51.49°N, λ = 16.06°E
H = 15:47:29, M = 2.6

KSP Δ = 74km
Pg iZ 15 47 41.1 D
Sg eE 47 48.5

OJC Δ = 299km
Pg eZ 15 48 19.1
Sg eE 48 54.8

AUG 27

φ = 51.478°N, λ = 16.034°E
H = 20:31:28.0, M = 2.7

KSP Δ = 73.1km
Pg iZ 20 31 40.0 D
Sg eE 31 48.7

OJC Δ = 300.5km
Pg eZ 20 32 18.8
Sg eN 32 53.8

AUG 28

φ = 51.448°N, λ = 16.172°E
H = 01:03:07.3, M = 3.1

KSP Δ = 68.0km
Pg iZ 01 03 18.5 D
Sg eE 03 26.8

RAC Δ = 208.9km
Pn eZ 01 03 38.3
eZ 03 42.0
S eNE 04 07.0

OJC Δ = 290.4km
Pg eZ 01 03 55.5
Sg eE 04 29.7

NIE Δ = 371.7km
P eZ 01 04 09.4
S eE 04 54.0

AUG 30

φ = 51.58°N, λ = 15.99°E
H = 00:51:16, M = 2.7

KSP Δ = 85km
Pg eZ 00 51 30.1
Sg eE 51 40.1

OJC Δ = 308km
Pg eZ 00 52 07.6
Sg eN 52 43.9

SEP 1

φ = 51.520°N, λ = 16.112°E
H = 21:09:11.9, M = 2.2

KSP Δ = 76.6km
Pg eZ 21 09 24.5
Sg eE 09 33.7

SEP 2

φ = 51.447°N, λ = 16.166°E
H = 19:40:03.3, M = 2.8

KSP Δ = 68.0km
Pg iZ 19 40 14.4 D
Sg eE 40 22.4

SEP 2

φ = 51.556°N, λ = 16.101°E
H = 23:30:24.7, M = 2.5

KSP Δ = 80.7km
Pg eZ 23 30 37.9
Sg eE 30 46.5

OJC Δ = 300.4km
Pg eZ 23 31 14.4
Sg eE 31 50.5

SEP 3

φ = 51.531°N, λ = 16.139°E
H = 15:00:32.6, M = 2.6

KSP Δ = 77.5km
Pg eZ 15 00 45.3
Sg eE 00 54.4

OJC Δ = 296.7km
Pg eZ 15 01 22.9
Sg eN 01 57.0

SEP 7

φ = 51.447°N, λ = 16.189°E
H = 09:21:36.7, M = 2.8

KSP Δ = 67.8km
Pg eZ 09 21 47.8
Sg eE 21 54.9

OJC Δ = 289.3km
Pg eZ 09 22 26.2
Sg eN 23 00.5

SEP 9

φ = 51.458°N, λ = 16.131°E
H = 16:26:26.3, M = 2.7

KSP Δ = 69.6km
Pg iZ 16 26 37.7 D
Sg eE 26 45.1

OJC Δ = 293.5km
Pg eZ 16 27 14.8
Sg eE 27 50.5

SEP 11

φ = 51.508°N, λ = 16.037°E
H = 16:01:31.7, M = 2.8

KSP Δ = 76.3km
Pg eZ 16 01 44.2
Sg eE 01 53.2

OJC Δ = 301.9km
Pg eZ 16 02 22.3
Sg eN 02 57.5

SEP 11

φ = 51.493°N, λ = 16.130°E
H = 22:53:18.3, M = 2.2

KSP Δ = 73.4km
Pg eZ 22 53 30.3
Sg eN 53 39.3

SEP 12

φ = 51.494°N, λ = 16.129°E
H = 11:42:47.1, M = 2.8

KSP Δ = 73.5km
Pg iZ 11 42 59.2 D
Sg eE 43 06.8

OJC Δ = 295.4km
Pg eZ 11 43 36.4
Sg eN 44 11.4

SEP 14

φ = 51.531°N, λ = 16.140°E
H = 01:03:35.7, M = 2.2

KSP Δ = 77.5km
Pg eZ 01 03 48.4
Sg eE 03 57.3

SEP 14

φ = 51.477°N, λ = 16.113°E
H = 04:06:27.2, M = 3.2

KSP Δ = 71.9km
Pg iZ 04 06 39.0 D
Sg eE 06 47.3

RAC Δ = 214.0km
Pn eZ 04 06 59.0
eZ 07 02.7
S eNE 07 28.1

OJC Δ = 295.6km
Pg eZ 04 07 16.1
Sg eN 07 51.1

NIE Δ = 376.9km
P eZ 04 07 29.9
S eN 08 15.0

SEP 15

φ = 51.447°N, λ = 16.189°E
H = 07:24:36.3, M = 3.4

KSP Δ = 67.8km
Pg eZ 07 24 47.4
Sg eE 24 55.6

RAC Δ = 208.0km
P eZ 07 25 10.7
S eNE 25 35.2

OJC Δ = 289.3km
Pg eZ 07 25 25.1
Sg eE 25 58.6

NIE Δ = 370.6km
P eZ 07 25 38.4
S eN 26 21.0

SEP 19

φ = 51.534°N, λ = 16.091°E
H = 16:20:27.0, M = 2.9

KSP Δ = 78.4km
Pg eZ 16 20 39.9
Sg eE 20 49.4

RAC Δ = 219.7km
P eZ 16 21 03.5
S eNE 21 29.7

OJC Δ = 299.9km
Pg eZ 16 21 15.8
Sg eN 21 52.4

NIE Δ = 381.9km
P eZ 16 21 30.9
S eN 22 15.7

SEP 20

φ = 51.492°N, λ = 16.130°E
H = 03:15:29.8, M = 2.9

KSP Δ = 73.3km
Pg iZ 03 15 41.8 D
Sg eE 15 50.5

RAC Δ = 214.4km
P eZ 03 16 04.6
S eNE 16 30.4

OJC Δ = 295.3km
Pg eZ 03 16 19.5
Sg eN 16 54.0

NIE Δ = 376.9km
P eZ 03 16 32.7
S eE 17 16.0

SEP 23

φ = 51.491°N, λ = 16.057°E
H = 02:54:19.3, M = 2.3

KSP Δ = 74.2km
Pg eZ 02 54 31.5
Sg eE 54 40.4

SEP 23

φ = 51.491°N, λ = 16.058°E
H = 05:42:12.4, M = 2.3

KSP Δ = 74.2km
Pg eZ 05 42 24.6
Sg eE 42 33.7

SEP 23

φ = 51.476°N, λ = 16.107°E
H = 22:41:59.5, M = 2.4

KSP Δ = 71.8km
Pg eZ 22 42 11.3
Sg eN 42 19.7

SEP 24

φ = 51.536°N, λ = 16.029°E
H = 02:37:39.7, M = 3.2

KSP Δ = 79.5km
Pg iZ 02 37 52.7 D
Sg eE 38 02.2

RAC Δ = 222.8km
P eZ 02 38 16.3
S eN 38 42.7

OJC Δ = 303.8km
Pg eZ 02 38 30.0
Sg eN 39 06.3

NIE Δ = 385.5km
P eZ 02 38 43.5
S eE 39 29.6

KWP Δ = 519.4km
Pn eZ 02 38 50.1
eZ 39 08.5
Sn eNE 39 55.2

SEP 25

φ = 51.466°N, λ = 16.110°E
H = 16:03:31.9, M = 2.9

KSP Δ = 70.7km
Pg iZ 16 03 43.5 D
Sg eE 03 52.0

OJC Δ = 295.2km
Pg eZ 16 04 21.5
Sg eN 04 56.6

SEP 28

φ = 51.509°N, λ = 16.087°E
H = 13:19:48.1, M = 2.6

KSP Δ = 75.7km
Pg eZ 13 20 00.5
Sg eE 20 09.7

OJC Δ = 298.8km
Pg eZ 13 20 37.9
Sg eN 21 13.7

SEP 28

φ = 51.509°N, λ = 16.087°E
H = 13:20:58.3, M = 3.1

KSP Δ = 75.7km
Pg eZ 13 21 10.7
Sg eN 21 20.3

OJC Δ = 298.8km
Pg eZ 13 21 48.5
Sg eE 22 23.5

SEP 28

φ = 51.446°N, λ = 16.169°E
H = 21:08:46.7, M = 2.2

KSP Δ = 67.8km
Pg eZ 21 08 57.8
Sg eE 09 05.9

SEP 29

φ = 51.451°N, λ = 16.173°E
H = 04:56:50.1, M = 2.5

KSP Δ = 68.4km
Pg eZ 04 57 01.3
Sg eE 57 09.6

SEP 29

φ = 51.453°N, λ = 16.077°E
H = 05:31:41.9, M = 3.1

KSP Δ = 69.7km
Pg iZ 05 31 53.3 D
Sg eE 32 01.8

RAC Δ = 213.9km
P eZ 05 32 16.8
S eN 32 41.3

OJC Δ = 296.6km
Pn eZ 05 32 23.8
Pg eZ 32 32.4
Sg eN 33 07.1

NIE Δ = 377.4km
P eZ 05 32 44.4
S eN 33 29.2

KWP Δ = 512.9km
P eZ 05 33 05.8
S eNE 34 15.8

SEP 29

φ = 51.454°N, λ = 16.076°E
H = 05:54:35.8, M = 3.5

KSP Δ = 69.9km
Pg iZ 05 54 47.2 D
Sg eE 54 55.0

GKP Δ = 217.5km
Pn eZ 05 55 09.8
S eE 55 41.2

RAC Δ = 214.0km
P eZ 05 55 10.7
S eNE 55 36.6

OJC Δ = 296.7km
Pn eZ 05 55 16.8
Pg eZ 55 24.4
Sg eN 55 59.5

NIE Δ = 377.5km
P eZ 05 55 39.2
S eN 56 23.3

KWP Δ = 513.0km
Pn eZ 05 55 45.0
eZ 56 04.5
S eNE 57 04.3

SEP 30

φ = 51.491°N, λ = 16.057°E
H = 04:01:57.0, M = 2.9

KSP Δ = 74.2km
Pg iZ 04 02 09.2 D
Sg eE 02 18.4

OJC Δ = 299.8km
Pg eZ 04 02 47.2
Sn eN 03 11.2
Sg eN 03 22.2

NIE Δ = 381.0km
P eZ 04 03 00.5
S eE 03 46.5

SEP 30

φ = 51.455°N, λ = 16.075°E
H = 06:24:59.0, M = 2.9

KSP Δ = 70.0km
Pg iZ 06 25 10.5 D
Sg eE 25 18.7

OJC Δ = 296.8km
Pg eZ 06 25 47.5
Sg eN 26 22.6

OCT 3

φ = 51.539°N, λ = 16.016°E
H = 00:35:44.6, M = 2.6

KSP Δ = 80.1km
Pg eZ 00 35 57.7
Sg eE 36 07.2

OJC Δ = 304.7km
Pg eZ 00 36 35.4
Sg eN 37 11.7

OCT 3

φ = 51.454°N, λ = 16.075°E
H = 01:47:01.1, M = 3.3

KSP Δ = 69.9km
Pg iZ 01 47 12.6 D
Sg eE 47 20.8

GKP Δ = 217.6km
P eZ 01 47 34.8
S eE 48 07.0

RAC Δ = 214.1km
P eZ 01 47 36.2
S eNE 48 02.1

OJC Δ = 296.8km
Pn eZ 01 47 42.1
Pg iZ 47 51.8
Sg eE 48 27.0

NIE Δ = 377.6km
P eZ 01 48 03.7
S eN 48 48.7

KWP Δ = 513.1km
Pn eZ 01 48 09.7
eZ 48 24.4
S eNE 49 32.8

SUW Δ = 559.2km
Pn eZ 01 48 15.7
S eNE 49 49.2

OCT 5

φ = 51.480°N, λ = 16.038°E
H = 03:54:19.6, M = 2.7

KSP Δ = 73.3km
Pg iZ 03 54 31.6 D
Sg eE 54 40.2

OJC Δ = 300.4km
Pg eZ 03 55 09.3
Sg eE 55 45.3

OCT 10

φ = 51.480°N, λ = 16.038°E
H = 15:35:51.2, M = 2.5

KSP Δ = 73.3km
Pg iZ 15 36 03.2 D
Sg eE 36 11.8

OCT 12

φ = 51.485°N, λ = 16.098°E
H = 16:04:46.7, M = 3.1

KSP Δ = 72.9km
Pg eZ 16 04 58.7
Sg eE 05 07.5

OJC Δ = 296.9km
Pg eZ 16 05 36.6
Sg eNE 06 11.8

OCT 14

φ = 51.516°N, λ = 16.114°E
H = 05:01:16.9, M = 3.1

KSP Δ = 76.1km
Pg iZ 05 01 29.4 D
Sg eE 01 38.5

OJC Δ = 297.5km
Pg eZ 05 02 06.9
Sg eE 02 41.7

NIE Δ = 379.4km
P eZ 05 02 20.3
S eN 03 04.7

OCT 15

φ = 51.480°N, λ = 16.037°E
H = 04:06:20.1, M = 3.1

KSP Δ = 73.3km
Pg iZ 04 06 32.1 D
Sg iE 06 40.9

RAC Δ = 218.0km
P eZ 04 06 56.0
S eNE 07 20.4

OJC Δ = 300.4km
Pn eZ 04 07 02.9
Pg eZ 07 10.8
Sg eE 07 45.3

NIE Δ = 381.4km
P eZ 04 07 23.5
S eE 08 09.3

OCT 15

φ = 51.449°N, λ = 16.171°E
H = 04:29:52.6, M = 2.3

KSP Δ = 68.2km
Pg eZ 04 30 03.8
Sg eE 30 11.7

OCT 16

φ = 51.411°N, λ = 16.240°E
H = 23:58:25.7, M = 2.6

KSP Δ = 63.5km
Pg iZ 23 58 36.1 D
Sg eE 58 43.8

OJC Δ = 284.4km
Pg eZ 23 59 13.0
Sg eN 59 47.4

OCT 18

φ = 51.490°N, λ = 16.057°E
H = 15:01:00.6, M = 2.6

KSP Δ = 74.1km
Pg eZ 15 01 12.7
Sg eE 01 20.4

OJC Δ = 299.7km
Pg eZ 15 01 50.8
Sg eN 02 26.3

OCT 21

φ = 51.448°N, λ = 16.172°E
H = 03:54:12.2, M = 3.2

KSP Δ = 68.0km
Pg iZ 03 54 23.4 D
Sg eE 54 31.8

RAC Δ = 208.9km
P eZ 03 54 46.6
S eN 55 10.4

OJC Δ = 290.4km
Pn eZ 03 54 52.5
Pg iZ 55 01.9
Sn eN 55 24.1
Sg eN 55 35.9

NIE Δ = 371.7km
P eZ 03 55 14.4
S eN 55 58.4

OCT 22

φ = 51.445°N, λ = 16.169°E
H = 00:02:39.4, M = 2.7

KSP Δ = 67.7km
Pg iZ 00 02 50.5 D
Sg eE 02 58.7

OJC Δ = 290.5km
Pg eZ 00 03 28.5
Sg eN 04 03.2

OCT 22

φ = 51.491°N, λ = 16.055°E
H = 09:51:23.7, M = 2.6

KSP Δ = 74.2km
Pg iZ 09 51 35.9 D
Sg eE 51 43.3

OJC Δ = 299.9km
Pg eZ 09 52 13.6
Sg eN 52 48.9

OCT 23

φ = 51.480°N, λ = 16.037°E
H = 13:34:12.5, M = 2.9

KSP Δ = 73.3km
Pg iZ 13 34 24.5 D
Sg eE 34 33.3

OJC Δ = 300.5km
Pg eZ 13 35 03.8
Sg eE 35 39.3

NIE Δ = 381.4km
P eZ 13 35 16.2
S eE 36 01.8

OCT 28

φ = 51.58°N, λ = 15.99°E
H = 03:58:51, M = 3.0

KSP Δ = 85km
Pg eZ 03 59 04.6
Sg eE 59 14.9

RAC Δ = 228km
P eZ 03 59 29.4
S eNE 59 56.4

OJC Δ = 308km
Pn eZ 03 59 34.1
Pg eZ 59 42.8
Sg eN 04 00 18.5

NIE Δ = 391km
P eZ 03 59 55.6
S eE 04 00 39.9

OCT 30

φ = 51.555°N, λ = 16.100°E
H = 09:13:20.2, M = 2.4

KSP Δ = 80.6km
Pg eZ 09 13 33.4
Sg eE 13 42.3

NOV 1

φ = 51.514°N, λ = 16.123°E
H = 00:03:31.0, M = 3.0

KSP Δ = 75.8km
Pg iZ 00 03 43.4 D
Sg eE 03 52.7

RAC Δ = 216.5km
Pn eZ 00 04 03.5
eZ 04 07.2
Sg eNE 04 32.8

OJC Δ = 296.8km
Pg eZ 00 04 20.3
Sg eN 04 56.2

NIE Δ = 378.8km
P eZ 00 04 33.3
S eE 05 18.6

NOV 2

φ = 51.484°N, λ = 16.096°E
H = 03:25:45.0, M = 2.6

KSP Δ = 72.8km
Pg iZ 03 25 56.9 D
Sg eE 26 05.5

OJC Δ = 297.0km
Pg eZ 03 26 34.7
Sg eN 27 09.3

NOV 3

φ = 51.480°N, λ = 16.037°E
H = 01:44:35.1, M = 2.8

KSP Δ = 73.3km
Pg iZ 01 44 47.1 D
Sg eE 44 54.7

RAC Δ = 218.0km
P eZ 01 45 11.2
S eE 45 36.6

OJC Δ = 300.5km
Pg eZ 01 45 26.3
Sg eN 46 01.2

NIE Δ = 381.4km
P eZ 01 45 38.7
S eE 46 23.8

NOV 4

φ = 51.408°N, λ = 16.239°E
H = 14:37:55.7, M = 2.5

KSP Δ = 63.2km
Pg eZ 14 38 06.1
Sg eE 38 13.8

NOV 5

φ = 51.447°N, λ = 16.189°E
H = 04:59:35.3, M = 3.2

KSP Δ = 67.8km
Pg iZ 04 59 46.4 D
Sg eE 59 53.4

RAC Δ = 208.0km
P eZ 05 00 10.4
S eNE 00 34.9

OJC Δ = 289.3km
Pg eZ 05 00 23.1
Sg eE 00 57.4

NIE Δ = 370.6km
P eZ 05 00 36.6
S eN 01 20.5

NOV 5

φ = 51.535°N, λ = 16.057°E
H = 06:46:21.5, M = 2.7

KSP Δ = 79.0km
Pg eZ 06 46 34.4
Sg eE 46 43.9

OJC Δ = 302.0km
Pg eN 06 47 13.3
Sg eE 47 47.4

NOV 5

φ = 51.449°N, λ = 16.162°E
H = 10:07:24.3, M = 2.6

KSP Δ = 68.2km
Pg iZ 10 07 35.5 D
Sg eE 07 43.7

OJC Δ = 291.1km
Pg eZ 10 08 13.9
Sg eN 08 47.4

NOV 6

φ = 51.477°N, λ = 16.112°E
H = 07:26:32.2, M = 2.7

KSP Δ = 71.9km
Pg iZ 07 26 44.0 D
Sg eE 26 52.4

OJC Δ = 295.6km
Pg eZ 07 27 23.0
Sg eN 27 55.9

NOV 15

φ = 51.447°N, λ = 16.189°E
H = 20:59:19.0, M = 2.9

KSP Δ = 67.8km
Pg iZ 20 59 30.1 D
Sg eE 59 37.2

OJC Δ = 289.3km
Pg eZ 21 00 06.9
Sg eE 00 41.4

NIE Δ = 370.6km
P eZ 21 00 22.6
S eN 01 07.0

NOV 16

φ = 51.401°N, λ = 16.185°E
H = 17:30:44.5, M = 2.5

KSP Δ = 62.7km
Pg iZ 17 30 54.8 D
Sg eE 31 02.3

NOV 25

φ = 51.478°N, λ = 16.106°E
H = 04:51:24.5, M = 2.7

KSP Δ = 72.0km
Pg iZ 04 51 36.3 D
Sg eE 51 44.8

OJC Δ = 296.1km
Pg eZ 04 52 14.0
Sg eE 52 49.9

NIE Δ = 377.4km
P eZ 04 52 27.4
S eN 53 12.5

NOV 25

φ = 51.562°N, λ = 16.005°E
H = 17:30:37.2, M = 2.7

KSP Δ = 82.7km
Pg eZ 17 30 50.8
Sg eE 31 00.6

OJC Δ = 306.6km
Pg eZ 17 31 29.7
Sg eN 32 04.7

NOV 25

φ = 51.544°N, λ = 16.130°E
H = 20:01:32.3, M = 2.9

KSP Δ = 79.0km
Pg iZ 20 01 45.3 D
Sg eE 01 54.4

OJC Δ = 298.0km
Pg eZ 20 02 22.8
Sg eE 02 56.8

NIE Δ = 380.4km
P eZ 20 02 35.5
S eN 03 20.0

NOV 25

φ = 51.544°N, λ = 16.132°E
H = 22:14:23.5, M = 2.7

KSP Δ = 79.0km
Pg iZ 22 14 36.5 D
Sg eN 14 45.6

RAC Δ = 218.6km
P eZ 22 15 00.0
S eNE 15 26.0

OJC Δ = 297.9km
Pg eZ 22 15 14.3
Sg eE 15 49.2

NOV 27

φ = 51.448°N, λ = 16.174°E
H = 16:10:11.4, M = 3.2

KSP Δ = 68.0km
Pg iZ 16 10 22.6 D
Sg eE 10 30.9

RAC Δ = 208.8km
P eZ 16 10 46.4
S eNE 11 09.5

OJC Δ = 290.3km
Pn eZ 16 10 51.6
Pg eZ 10 58.8
Sg eE 11 33.8

NIE Δ = 371.6km
P eZ 16 11 13.6
S eN 11 57.4

NOV 29

φ = 51.544°N, λ = 16.132°E
H = 23:47:08.8, M = 2.8

KSP Δ = 79.0km
Pg eZ 23 47 21.7
Sg eE 47 31.0

OJC Δ = 297.9km
Pg eZ 23 47 58.2
Sg eE 48 33.3

NIE Δ = 380.3km
(P) eZ 23 48 13.2
S eE 48 56.4

NOV 30

φ = 51.554°N, λ = 16.101°E
H = 04:52:55.4, M = 3.8

KSP Δ = 80.5km
Pg iZ 04 53 08.6 D
Sg iE 53 18.5

RAC Δ = 220.8km
Pn eZ 04 53 28.0
eZ 53 32.2
S eNE 53 57.3

OJC Δ = 300.3km
Pn eZ 04 53 36.7
Pg eZ 53 45.3
Sg eN 54 21.0

NIE Δ = 382.7km
P eZ 04 53 58.9
S eE 54 42.7

KWP Δ = 515.5km
Pn eZ 04 54 04.4
eZ 54 23.9
S eNE 55 25.1

NOV 30

φ = 51.480°N, λ = 16.101°E
H = 05:50:48.4, M = 3.1

KSP Δ = 72.3km
Pg iZ 05 51 00.3 D
Sg iE 51 08.9

RAC Δ = 214.9km
P eZ 05 51 24.9
S eNE 51 49.5

OJC Δ = 296.5km
Pg eZ 05 51 36.7
Sg eN 52 13.0

NIE Δ = 377.8km
P eZ 05 51 51.4
S eE 52 35.8

DEC 3

φ = 51.504°N, λ = 16.148°E
H = 06:10:39.1, M = 2.8

KSP Δ = 74.5km
Pg iZ 06 10 51.3 D
Sg eE 11 00.1

OJC Δ = 294.8km
Pg eZ 06 11 28.7
Sg eE 12 03.2

DEC 3

φ = 51.557°N, λ = 16.103°E
H = 17:31:56.3, M = 2.6

KSP Δ = 80.8km
Pg iZ 17 32 09.5 D
Sg eE 32 19.0

DEC 5

φ = 51.411°N, λ = 16.242°E
H = 00:29:31.8, M = 2.7

KSP Δ = 63.5km
Pg iZ 00 29 42.2 D
Sg iE 29 49.9

OJC Δ = 284.2km
Pg eZ 00 30 19.7
Sg eN 30 54.1

DEC 8

φ = 51.47°N, λ = 16.11°E
H = 16:42:34, M = 3.1

KSP Δ = 71km
Pg iZ 16 42 45.9 D
Sg iE 42 54.4

RAC Δ = 214km
P eZ 16 43 09.7
S eNE 43 35.0

OJC Δ = 295km
Pn eZ 16 43 16.6
Pg eZ 43 24.4
Sg eN 43 58.8

NIE Δ = 377km
P eZ 16 43 37.1
S eE 44 20.3

DEC 9

φ = 51.44°N, λ = 16.12°E
H = 04:40:01, M = 3.0

KSP Δ = 68km
Pg iZ 04 40 12.2 D
Sg eE 40 20.3

OJC Δ = 293km
Pg eZ 04 40 50.6
Sg eN 41 25.3

DEC 10

φ = 51.58°N, λ = 15.99°E
H = 23:55:59, M = 2.6

KSP Δ = 85km
Pg eZ 23 56 13.1
Sg eE 56 23.1

OJC Δ = 308km
Pg eZ 23 56 50.5
Sg eN 57 27.1

DEC 15

φ = 51.445°N, λ = 16.169°E
H = 09:40:30.4, M = 2.8

KSP Δ = 67.7km
Pg iZ 09 40 41.5 D
Sg eE 40 49.7

OJC Δ = 290.5km
Pg eZ 09 41 18.2
Sg eZ 41 54.1

DEC 18

φ = 51.475°N, λ = 16.105°E
H = 05:51:57.1, M = 2.7

KSP Δ = 71.7km
Pg eZ 05 52 08.9
Sg eE 52 17.5

OJC Δ = 296.0km
Pg eZ 05 52 45.8
Sg eN 53 21.1

DEC 19

φ = 51.484°N, λ = 16.095°E
H = 21:16:44.1, M = 3.0

KSP Δ = 72.8km
Pg iZ 21 16 56.0 D
Sg eE 17 04.8

RAC Δ = 215.5km
P eZ 21 17 20.0
S eNE 17 46.0

OJC Δ = 297.0km
Pg eZ 21 17 33.7
Sg eN 18 08.4

NIE Δ = 378.4km
P eZ 21 17 47.3
S eN 18 32.9

DEC 19

φ = 51.484°N, λ = 16.097°E
H = 22:20:03.8, M = 2.7

KSP Δ = 72.8km
Pg iZ 22 20 15.7 D
Sg eE 20 24.1

OJC Δ = 296.9km
Pg eZ 22 20 53.6
Sg eN 21 28.4

NIE Δ = 378.3km
P eZ 22 21 06.9
S eN 21 52.7

DEC 24

φ = 51.486°N, λ = 16.099°E
H = 12:19:30.5, M = 2.9

KSP Δ = 73.0km
Pg iZ 12 19 42.5 D
Sg eE 19 51.1

OJC Δ = 296.9km
Pg eZ 12 20 20.1
Sg eN 20 54.7

DEC 25

φ = 51.495°N, λ = 16.103°E
H = 04:56:30.4, M = 2.3

KSP Δ = 74.0km
Pg eZ 04 56 42.5
Sg eE 56 51.2

DEC 27

φ = 51.450°N, λ = 16.173°E
H = 17:30:22.5, M = 2.6

KSP Δ = 68.2km
Pg iZ 17 30 33.7 D
Sg eE 30 41.7

OJC Δ = 290.5km
Pg eZ 17 31 11.1
Sg eE 31 45.3

DEC 28

φ = 51.479°N, λ = 16.104°E
H = 16:05:07.8, M = 3.0

KSP Δ = 72.2km
Pg eZ 16 05 19.6
Sg iE 05 28.2

OJC Δ = 296.2km
Pg eZ 16 05 57.4
Sg eE 06 32.4

NIE Δ = 377.5km
P eZ 16 06 10.8
S eE 06 56.5

DEC 30

φ = 51.44°N, λ = 16.12°E
H = 04:16:03, M = 2.5

KSP Δ = 71km
Pg iZ 04 16 14.6 D
Sg eE 16 22.0

OJC Δ = 296km
Pn eZ 04 16 44.2
Pg eZ 16 52.9
Sg eN 17 28.0

Bełchatów 2005

FEB 20

φ = 51.233°N, λ = 19.293°E
H = 05:47:36, M = 2.4

OJC	Δ = 118.6km			
	Pg	eZ	05 47	56.2
	Sg	eE	48	10.4
NIE	Δ = 215.0km			
	Pn	eZ	05 48	09.8
	S	eE	48	37.3
KSP	Δ = 215.4km			
	Pg	eZ	05 48	10.5
	Sg	eN	48	35.6

MAY 30

φ = 51.252°N, λ = 19.271°E
H = 12:40:15, M = 3.4

OJC	Δ = 121.1km			
	Pg	eZ	12 40	34.6
	Sg	eE	40	50.2
RAC	Δ = 151.0km			
	Pg	eZ	12 40	39.6
	Sg	eNE	40	58.3
KSP	Δ = 214.3km			
	Pn	eZ	12 40	46.4
	Pg	eZ	40	50.0
	Sn	eN	41	10.1
	Sg	eN	41	14.3
NIE	Δ = 217.5km			
	Pn	eZ	12 40	48.3
	Pg	eZ	40	51.1
	S	eN	41	16.2
GKP	Δ = 264.7km			
	P	eZ	12 40	51.6
	S	eE	41	35.9
KWP	Δ = 304.2km			
	(Pn)	eZ	12 41	02.5
		eZ	41	14.0
	(Sn)	eNE	41	39.2
		eNE	41	47.2
SUW	Δ = 406.5km			
	Pg	eZ	12 41	21.5
	Sg	eNE	42	16.3

MAY 31

φ = 51.243°N, λ = 19.289°E
H = 23:43:35, M = 2.0

OJC	Δ = 119.7km			
	Pg	eZ	23 43	55.2
	Sg	eE	44	10.1

JUN 02

φ = 51.253°N, λ = 19.269°E
H = 03:41:31, M = 2.3

OJC	Δ = 121.2km			
	Pg	eZ	03 41	48.7
	Sg	eE	42	03.4
KSP	Δ = 214.1km			
	Pg	eE	03 42	04.7
	Sg	eE	42	28.7

JUN 18

φ = 51.241°N, λ = 19.254°E
H = 11:17:53, M = 2.1

OJC	Δ = 120.3km			
	Pg	eZ	11 18	13.3
	Sg	eE	18	28.3

JUL 01

φ = 51.236°N, λ = 19.267°E
H = 14:56:42, M = 2.5

OJC	Δ = 119.4km			
	Pg	eZ	14 57	03.0
	Sg	eE	57	18.1
KSP	Δ = 213.6km			
	Pg	eZ	14 57	17.1
	Sg	eN	57	42.1
NIE	Δ = 215.9km			
	Pg	eZ	14 57	19.2
	S	eN	57	44.4

JUL 01

φ = 51.238°N, λ = 19.258°E
H = 21:52:22, M = 2.3

OJC	Δ = 119.9km			
	Pg	eZ	21 52	42.8
	Sg	eN	52	58.4
KSP	Δ = 213.1km			
	Pg	eE	21 52	57.2
	Sg	eN	53	21.3

JUL 18

φ = 51.231°N, λ = 19.257°E
H = 19:00:09, M = 2.4

OJC	Δ = 119.1km				
	Pg	iZ	19	00	28.8 d
	Sg	eE		00	43.8
KSP	Δ = 212.9km				
	Pg	eE	19	00	42.4
	Sg	eN		01	08.2

OCT 04

φ = 51.240°N, λ = 19.257°E
H = 15:40:33, M = 2.2

OJC	Δ = 120.1km				
	Pg	eZ	15	40	54.6
	Sg	eE		41	09.6

DEC 22

φ = 51.243°N, λ = 19.244°E
H = 00:38:04, M = 2.1

OJC	Δ = 120.7km				
	Pg	eZ	00	38	24.4
	Sg	eE		38	39.3

DEC 28

φ = 51.253°N, λ = 19.266°E
H = 17:00:25, M = 2.4

OJC	Δ = 121.3km				
	Pg	eZ	17	00	45.2
	Sg	iE		01	00.9
KSP	Δ = 213.9km				
	Pg	eZ	17	01	00.5
	S	eN		01	26.8
NIE	Δ = 217.7km				
	Pg	eZ	17	01	01.7
	S	eE		01	27.0

Western Carpathians 2005

JAN 03

φ = 49.31°N±0.069, λ = 19.90°E±0.089
H = 17:37:07.5±1.43, M = 2.3 (NIE)

NIE	Δ = 32.4km			
	Pg	eZ	17 37 14.8	
	Sg	eN	37 18.7	
OJC	Δ = 101.7km			
	Pg	eZ	17 37 25.8	
	Sg	eNE	37 37.3	

JAN 23

φ = 49.34°N±0.065, λ = 19.85°E±0.051
H = 23:33:18.4±0.80, M = 3.1 (NIE)
φ_{mac} = 49.40°N, λ_{mac} =19.92°E
h_{mac} = 3-5km, M_{mac}= 3.2, I_o = 4-5

NIE	Δ = 34.8km			
	Pg	eZ	23 33 25.1	
	Sg	eN	33 29.4	
OJC	Δ = 98.1km			
	Pg	iZ	23 33 35.9	c
	Sg	eE	33 47.8	
RAC	Δ = 145.6km			
	Pg	eZ	23 33 45.1	
	Sg	eNE	34 03.5	
KWP	Δ = 210.1km			
	Pn	eZ	23 33 54.2	
	Sn	eNE	34 21.0	
KSP	Δ = 305.2km			
	Pn	eEZ	23 34 10.6	
	(PmPPmP)	eNEZ	34 15.2	
	Sn	eNEZ	34 44.6	

JAN 29

φ = 49.35°N±0.068, λ = 19.90°E±0.082
H = 17:16:54.0±1.27, M = 3.4 (NIE)
φ_{mac} = 49.40°N, λ_{mac} =19.92°E
h_{mac} = 3-5km, M_{mac}= 3.4, I_o = 5

NIE	Δ = 31km			
	Pg	eZ	17 17 00.3	c
	Sg	eE	17 04.4	
OJC	Δ = 97.2km			
	Pg	eZ	17 17 11.6	c
	Sg	eE	17 23.2	
		eN	17 23.9	
RAC	Δ = 148.0km			
	Pg	eZ	17 17 21.2	
	Sg	iNE	17 39.9	
KWP	Δ = 206.3km			
	Pn	eZ	17 17 29.6	
	PmP	eZ	17 32.3	
	Sn	eNE	17 55.5	
KSP	Δ = 307.6km			
	Pn	eNEZ	17 17 41.5	
	(PmPPmP)	eNEZ	17 46.7	
	Sn	eNEZ	18 14.8	
	(SmS)	eNEZ	18 21.0	
GKP	Δ = 475.1km			
	(P)	eZ	17 18 17.2	
SUW	Δ = 567.6km			
	(P)	eZ	17 18 17.1	
	(S)	eNE	19 33.7	

FEB 07

φ = 49.33°N±0.072, λ = 19.89°E±0.083
H = 06:08:38.8±1.40, M = 2.7 (NIE)
M_{mac}= 2.6, I_o = 3

NIE	Δ = 32.4km			
	Pg	eZ	06 08 45.3	c
	Sg	iE	08 49.3	
OJC	Δ = 99.4km			
	Pg	eZ	06 08 57.9	
	Sg	eN	09 10.3	

FEB 18

φ = 49.37°N±0.080, λ = 19.78°E±0.091
H = 01:32:48.8±1.13, M = 2.7 (NIE)

NIE	Δ = 39.2km			
	Pg	eZ	01 32 56.1	
	Sg	eN	33 01.8	
OJC	Δ = 94.7km			
	Pg	eZ	01 33 07.6	
	Sg	eN	33 21.6	

FEB 18

φ = 49.36°N±0.068, λ = 19.75°E±0.100
H = 17:37:15.5±1.65, M = 2.5 (NIE)

NIE	Δ = 41.5km			
	Pg	eZ	17 37 24.1	
	Sg	eN	37 29.7	

OJC Δ = 95.9km
(Pg) eZ 17 37 35.7
(Sg) eN 37 49.5

FEB 22
φ = 49.30°N±0.069, λ = 19.89°E±0.083
H = 20:55:25.9±1.34, M = 2.6 (NIE)

NIE Δ = 33.5km
Pg eZ 20 55 32.8
Sg eN 55 37.2

OJC Δ = 102.7km
Pg eZ 20 55 45.3
Sg eE 55 57.3

APR 03
φ = 49.30°N±0.069, λ = 19.92°E±0.091
H = 02:05:22.4±1.47, M = 2.4 (NIE)

NIE Δ = 31.5km
Pg eZ 02 05 29.3
Sg eN 05 33.7

OJC Δ = 102.9km
Pg eZ 02 05 42.5
Sg eNE 05 54.0

MAY 01
φ ≈ 49.4°N, λ ≈ 19.9°E
H ≈ 15:36:40, M = 2.3 (NIE)

NIE Δ ≈ 30km
Pg iZ 15 36 45.6 c
Sg eN 36 49.7

OJC Δ ≈ 92km
Pg eZ 15 36 59.9
(Sg) eE 37 12.2

MAY 01
φ ≈ 49.4°N, λ ≈ 19.9°E
H ≈ 16:17:00, M = 2.1 (NIE)

NIE Δ ≈ 30km
Pg iZ 16 17 05.2 c
Sg eN 17 09.4

OJC Δ ≈ 92km
Pg eZ 16 17 19.3
Sg eE 17 31.8

JUN 02
φ = 49.34°N±0.068, λ = 19.85°E±0.062
H = 07:43:24.2±0.97, M = 3.2 (NIE)
φ_{mac} = 49.40°N, λ_{mac} =19.92°E
h_{mac} = 3-5km, I_o = 5

NIE Δ = 34.8km
Pg eZ 07 43 31.5 c
Sg iN 43 35.9

OJC Δ = 98.1km
Pg eZ 07 43 42.5 c
Sg eE 43 54.7

RAC Δ = 145.6km
P eZ 07 43 52.0
Sg eNE 44 10.7

KWP Δ = 210.1km
(Pn) eZ 07 44 01.8
PmP eZ 44 03.1
SmS eNE 44 27.3

KSP Δ = 305.2km
Pn eZ 07 44 13.0
(PmPPmP) eNEZ 44 18.8
Sn eE 44 44.8
(SmS) eN 44 52.6

JUN 13
φ = 49.31°N±0.069, λ = 19.87°E±0.077
H = 08:59:04.3±1.32, M = 2.6 (NIE)

NIE Δ = 34.5km
Pg eZ 08 59 11.9
Sg eNE 59 16.2

OJC Δ = 101.5km
Pg eZ 08 59 22.8
Sg eE 59 34.2

JUN 28
φ ≈ 49.4°N, λ ≈ 19.9°E
H ≈ 13:57:10, M = 2.4 (NIE)

NIE Δ ≈ 30km
Pg eZ 13 57 16.8
Sg eN 57 20.7

OJC Δ ≈ 92km
(Pg) eZ 13 57 28.8
Sg eE 57 39.7

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AUG 24
φ = 49.33°N±0.068, λ = 19.90°E±0.074
H = 15:46:10.1±1.26, M = 2.8 (NIE)

NIE	Δ = 31.7km		
	Pg	eZ	15 46 16.9
	Sg	eNE	46 21.0
OJC	Δ = 99.5km		
	Pg	eZ	15 46 28.1
	Sg	eE	46 40.1

AUG 25
φ = 49.33°N±0.090, λ = 19.91°E±0.087
H = 01:44:22.6±1.46, M = 2.4 (NIE)

NIE	Δ = 31.0km		
	Pg	eZ	01 44 29.7
	Sg	eN	44 33.6
OJC	Δ = 99.5km		
	Pg	eZ	01 44 41.0
	Sg	eNE	44 52.8

AUG 27
φ = 49.36°N±0.061, λ = 19.92°E±0.080
H = 14:44:12.7±1.39, M = 2.6 (NIE)

NIE	Δ = 29.4km		
	Pg	eZ	14 44 19.2
	Sg	eN	44 23.1
OJC	Δ = 96.2km		
	Pg	eZ	14 44 30.2
	Sg	eE	44 42.1

AUG 27
φ = 49.31°N±0.069, λ = 19.91°E±0.091
H = 14:48:17.4±1.46, M = 2.3 (NIE)

NIE	Δ = 31.8km		
	Pg	eZ	14 48 24.5
	Sg	eN	48 28.4
OJC	Δ = 101.7km		
	Pg	eZ	14 48 35.9
	Sg	eE	48 47.5

AUG 27
φ = 49.31°N±0.068, λ = 19.91°E±0.089
H = 22:33:19.6±1.44, M = 2.2 (NIE)

NIE	Δ = 31.8km		
	Pg	eZ	22 33 26.8
	Sg	eNE	33 30.7
OJC	Δ = 101.7km		
	Pg	eZ	22 33 38.2
	Sg	eE	33 49.8

AUG 28
φ ≈ 49.4°N, λ ≈ 19.9°E
H ≈ 10:30:20, M = 2.1 (NIE)

NIE	Δ ≈ 30km		
	Pg	eZ	10 30 27.4
	Sg	eNE	30 31.2
OJC	Δ ≈ 92km		
	(Pg)	eZ	10 30 38.7
	(Sg)	eN	30 50.6

AUG 28
φ ≈ 49.4°N, λ ≈ 19.9°E
H ≈ 10:34:15, M = 2.0 (NIE)

NIE	Δ ≈ 30km		
	Pg	eZ	10 34 21.0
	Sg	eNE	34 24.8
OJC	Δ ≈ 92km		
	(Pg)	eZ	10 34 32.6
	(Sg)	eN	34 44.2

NOV 06
φ = 49.30°N±0.068, λ = 20.50°E±0.234
H = 14:44:26.3±1.54, M = 2.5 (NIE)

NIE	Δ = 19km		
	Pg	iZ	14 44 31.1 c
	Sg	eE	44 35.6
OJC	Δ = 114.4km		
	Pg	eZ	14 44 46.3
	Sg	eN	45 00.9

DEC 06
φ = 49.30°N±0.074, λ = 20.57°E±0.150
H = 11:40:25.3±1.35, M = 2.4 (NIE)

NIE	Δ = 22.9km		
	Pg	eZ	11 40 32.4
	Sg	eE	40 36.8
OJC	Δ = 116.7km		
	(Pg)	eZ	11 40 45.5
	(Sg)	eE	41 00.2