**Select start of calculation:**

Date: 10 July 2014

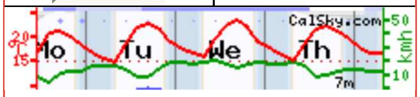
Time: 23 : 00 : 14 . 00 in TDT Now

**Select duration:** 30 Minutes go!

geipan
***Le Pouliguen, France, France***

| | |
|---|---|
| Easting: | -2.4253 |
| Northing: | 47.2698 |
| Time zone: | CET/ CEST |

Astronomer




Weather · Sat-Image



# The Calendar-Sky

The astronomical calendar contains **thousands of events per day** for every point on Earth. We know that you only care for a very few of these events and hence we let you personalize your own Astro-Calendar. You may primarily do so by switching to your appropriate user level, and by selecting some of the three dozens categories.

In parentheses are forced limits for the maximum calculation interval. The celestial calendar is to be found further below on this page and will appear within some seconds after pressing the *Go!*-Button (depending on the complexity of your selections). The calendar is created especially for you. The higher your user level, the more complex objects you selected, the longer it does take to calculate. *Please do not press the reload-button*; the calculations will take significantly longer.

**Calendar and Timekeeping**

- [ ] Space Calendar: Birthdays, Rocket Launches
- [ ] Local Events (Talks, Exhibitions)
- [ ] NASA TV Guide
- [ ] Local Telescope Dealers
- [ ] Public Holidays
- [ ] Saint's Day
- [ ] Zodiac of today. Change of Zodiac
- [ ] Islamic, Indian, Persian and Hebrew Calendar
- [ ] Week Number
- [ ] Sundials / GPS Time / Current Time Definitions
- [ ] Julian Day Number
- [ ] Sidereal Time
- [ ] Local Magnetic Field

**General events**

- [ ] Lunar Occultations (2 months)
- [ ] Planetary Conjunctions
- [ ] Lunar Eclipses
- [ ] Solar Eclipses and Transits
- [ ] Meteor Showers
- [ ] Planetary Phenomena
- [ ] Lunar Phenomena
- [ ] The Sun
- [ ] Asteroids (6 months)
- [ ] Comets

**Earth orbiting satellites**

- [x] Space Station ISS (1 month)
- [x] short duration Flares of Iridium satellites (14 days)
- [x] Passes of other bright satellites (*1 day*, slow!)

**Daily reoccurring events**

- [ ] Graphical night calendar
- [ ] Sun and Moon
- [ ] Planets
- [ ] Asteroids
- [ ] Comets
- [ ] Meteor Showers
- [ ] Polar Star Transits
- [ ] Weather Balloons

**Dimmer and more difficult objects**

- [ ] Jupiter: Great Red Spot and satellite events
- [ ] Jupiter's Satellites: position
- [ ] Saturn: Satellite events and storms
- [ ] Saturn's Satellites: position
- [ ] Zodiacal light/Gegenschein
- [ ] Variable Stars (3 months)
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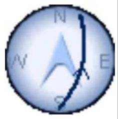
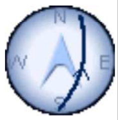
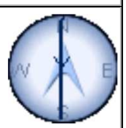
**Deep sky objects**

- [ ] Star chart
- [ ] Milky Way
- [ ] Galaxies
- [ ] Open Star Clusters
- [ ] Globular Star Clusters
- [ ] Nebula

go!

## Thursday 10 July 2014

| Time (24-hour clock) | Object (Link) | Event |
|---|---|---|

| | | |
|---|---|---|
| | Observer Site | Le Pouliguen, France, France<br>WGS84: Lon: -2d25m31.34s Lat: +47d16m11.47s Alt: 56m<br>All times in CET or CEST (during summer) |
| 23h00m14s | Terra (25994 1999-068-A)<br>→Ground track<br>→Star chart | <br>**Appears** **22h50m35s** 4.7mag az:118.5° ESE h:6.9°<br>**Culmination** **22h55m02s** **4.1mag** az: 62.2° **ENE** **h:22.9°**<br>distance: 1485.1km height above Earth: 709.8km elevation of Sun: -7° angular velocity: 0.30°/s<br>**at Meridian** **23h00m45s** 7.1mag az: 0.0° N h:2.4°<br>**Disappears** **23h01m22s** 7.4mag az:357.6° N horizon |
| 23h00m14s | Cosmos 389 Rocket (04814 1970-113-B)<br>→Ground track<br>→Star chart | <br>**Appears** **22h50m00s** 6.7mag az:200.4° SSW horizon<br>**Culmination** **22h55m49s** **4.5mag** az:283.9° **WNW** **h:53.9°**<br>distance: 608.6km height above Earth: 501.0km elevation of Sun: -7° angular velocity: 0.72°/s<br>**at Meridian** **22h58m50s** 6.9mag az: 0.0° N h:14.3°<br>**Disappears** **23h01m35s** 8.1mag az: 7.7° N horizon |
| 23h00m49s | USA 229/NOSS-3 5(B) (37391 2011-014-B)<br>→Ground track<br>→Star chart | <br>**Appears** **22h51m22s** 7.0mag az:192.8° SSW horizon<br>**at Meridian** **22h55m58s** 5.8mag az:180.0° S h:18.5°<br>**Culmination** **23h00m49s** **4.8mag** az:117.9° **ESE** **h:44.0°**<br>distance: 1504.6km height above Earth: 1122.8km elevation of Sun: -8° angular velocity: 0.28°/s<br>**Disappears** **23h10m14s** 7.6mag az: 43.4° NE horizon |
| 23h00m56s | USA 228/NOSS-3 5(A) (37386 2011-014-A)<br>→Ground track<br>→Star chart | <br>**Appears** **22h51m29s** 7.0mag az:192.5° SSW horizon<br>**at Meridian** **22h56m00s** 5.9mag az:180.0° S h:17.9°<br>**Culmination** **23h00m56s** **4.8mag** az:117.7° **ESE** **h:43.5°**<br>distance: 1512.0km height above Earth: 1120.6km elevation of Sun: -8° angular velocity: 0.28°/s<br>**Disappears** **23h10m19s** 7.5mag az: 43.5° NE horizon |
| 23h06m57s | USA 182/Lacrosse 5 | <br>Flare from SAR antenna **Magnitude= 3.1mag**<br>Azimuth=302.8° WNW altitude= 22.0° in constellation Leo Minor<br>RA= 9h38.8m Dec=+38°00'<br>Flare angle=15.70°<br>**Flare center line**, **closest point** →MapIt: Longitude=7.088°W Latitude=+51.262° (WGS84) **Distance=557.5 km** Azimuth=324.4° NW Peak Magnitude=-0.3mag<br>Satellite above: longitude=15.9°W latitude=+53.3° height above Earth=720.0 km distance to satellite=1537.4 km<br>Altitude of Sun=-8.8°<br>This is an experimental flare prediction. Brightness estimate may be unreliable. Please report a successful observation (Object/site coordinates/date/measured time/accuracy/magnitude). |
| 23h06m59s | Helios 1A Rocket (23608 1995-033-D)<br>→Ground track<br>→Star chart | <br>**Appears** **23h00m38s** 8.0mag az: 13.9° NNE horizon<br>**Culmination** **23h06m59s** **3.6mag** az:104.3° **ESE** **h:85.2°**<br>distance: 591.3km height above Earth: 589.4km elevation of Sun: -9° angular velocity: 0.73°/s |

| | | |
|---|---|---|
| | | **at Meridian** **23h07m24s** 3.6mag az:180.0° S h:71.2°<br>**Disappears** **23h13m13s** 6.8mag az:194.4° SSW horizon |
| 23h07m58s | USA 216/SBSS 1 (37168 2010-048-A)<br>→Ground track<br>→Star chart | <br>**Appears** **23h01m27s** 9.0mag az: 17.8° NNE horizon<br>**Culmination** **23h07m58s** **5.0mag** az: 99.4° **E** **h:48.7°**<br>distance: 816.0km height above Earth: 633.9km elevation of Sun: -9° angular velocity: 0.52°/s<br>**Disappears** **23h13m18s** 7.3mag az:178.3° S h:4.7° |
| 23h09m13s | USA 182/Lacrosse 5 (28646 2005-016-A)<br>→Ground track<br>→Star chart | <br>**Appears** **23h02m07s** 7.2mag az:272.4° W horizon<br>**Culmination** **23h09m13s** **5.0mag** az:345.9° **NNW** **h:31.2°**<br>distance: 1238.9km height above Earth: 720.9km elevation of Sun: -9° angular velocity: 0.34°/s<br>**at Meridian** **23h09m50s** 4.8mag az: 0.0° N h:30.3°<br>**Disappears** **23h16m21s** 5.7mag az: 59.4° ENE horizon |
| 23h11m39s | Resurs P1 (39186 2013-030-A)<br>→Ground track<br>→Star chart | <br>**Appears** **23h08m59s** 4.7mag az:122.5° ESE h:11.2°<br>**Culmination** **23h11m39s** **4.1mag** az: 68.1° **ENE** **h:24.8°**<br>distance: 984.4km height above Earth: 471.4km elevation of Sun: -9° angular velocity: 0.46°/s<br>**at Meridian** **23h16m34s** 7.9mag az: 0.0° N h:1.4°<br>**Disappears** **23h16m51s** 8.0mag az:359.0° N horizon |
| 23h13m03s | Envisat (27386 2002-009-A)<br>→Ground track<br>→Star chart | <br>**Appears** **23h07m46s** 5.7mag az:156.3° SSE h:8.9°<br>**Culmination** **23h13m03s** **3.8mag** az: 72.8° **ENE** **h:72.3°**<br>distance: 806.8km height above Earth: 773.0km elevation of Sun: -9° angular velocity: 0.55°/s<br>**at Meridian** **23h14m49s** 5.4mag az: 0.0° N h:40.7°<br>**Disappears** **23h20m26s** 9.2mag az:348.3° NNW horizon |
| 23h13m32s | USA 81/SBWASS R3/Singleton 3 (21949 1992-023-A)<br>→Ground track<br>→Star chart | <br>**Appears** **23h05m54s** 9.9mag az:351.5° N horizon<br>**Culmination** **23h13m32s** **5.3mag** az:268.3° **W** **h:67.4°**<br>distance: 853.9km height above Earth: 796.0km elevation of Sun: -9° angular velocity: 0.49°/s<br>**Disappears** **23h20m38s** 7.4mag az:184.9° S h:2.1° |
| 23h14m35s | SPOT 7 (40053 2014-034-A)<br>→Ground track<br>→Star chart | <br>**Appears** **23h10m04s** 4.6mag az:149.6° SSE h:10.6°<br>**Culmination** **23h14m35s** **2.9mag** az: 71.5° **ENE** **h:58.6°**<br>distance: 808.2km height above Earth: 702.1km elevation of Sun: -10° angular velocity: 0.55°/s<br>**at Meridian** **23h17m25s** 5.6mag az: 0.0° N h:23.1°<br>**Disappears** **23h21m31s** 8.2mag az:350.1° N horizon |
| 23h15m13s | Cosmos 1939 (19045 1988-032-A)<br>→Ground track<br>→Star chart | <br>**Appears** **23h13m10s** 5.0mag az:132.4° SE h:13.9°<br>**Culmination** **23h15m13s** **4.1mag** az: 71.7° **ENE** **h:32.3°**<br>distance: 635.0km height above Earth: 360.1km elevation of Sun: -10° angular velocity: 0.71°/s<br>**at Meridian** **23h18m48s** 8.1mag az: 0.0° N h:4.6°<br>**Disappears** **23h19m50s** 8.9mag az:356.3° N horizon |

| | | |
|---|---|---|
| | | Time uncertainty of about 9 seconds |
| 23h16m33s | USA 217/STPSat-2 (37222 2010-062-A)<br>→Ground track<br>→Star chart | <br>**Appears** **23h09m39s** 11.3mag az:336.3° NNW horizon<br>**at Meridian** **23h15m09s** 6.5mag az: 0.0° N h:41.5°<br>**Culmination** **23h16m33s** **5.1mag** az: 61.9° **ENE** **h:62.6°** distance: 725.7km height above Earth: 652.5km elevation of Sun: -10° angular velocity: 0.57°/s<br>**Disappears** **23h20m33s** 6.6mag az:142.1° SE h:13.4° |
| 23h19m40s | USA 222/Fastrac 1 / ST 1 (37227 2010-062-F)<br>→Ground track<br>→Star chart | <br>**Appears** **23h12m48s** 13.0mag az:334.7° NNW horizon<br>**at Meridian** **23h19m11s** 6.8mag az: 0.0° N h:69.6°<br>**Culmination** **23h19m40s** **6.4mag** az: 64.5° **ENE** **h:80.9°** distance: 656.4km height above Earth: 648.9km elevation of Sun: -10° angular velocity: 0.64°/s<br>**Disappears** **23h23m42s** 8.1mag az:151.7° SSE h:13.5°<br>Time uncertainty of about 31 minutes |
| 23h21m49s | Cosmos 1782 (16986 1986-074-A)<br>→Ground track<br>→Star chart | <br>**Appears** **23h15m40s** 8.8mag az:356.2° N horizon<br>**at Meridian** **23h17m02s** 8.1mag az: 0.0° N h:5.6°<br>**Culmination** **23h21m49s** **4.1mag** az: 75.9° **ENE** **h:42.1°** distance: 805.3km height above Earth: 565.0km elevation of Sun: -10° angular velocity: 0.52°/s<br>**Disappears** **23h24m56s** 5.2mag az:143.7° SE h:14.8° |
| 23h22m22s | USA 234/FIA Radar 2 (38109 2012-014-A)<br>→Ground track<br>→Star chart | <br>**Appears** **23h15m54s** 5.8mag az:165.5° SSE h:7.4°<br>**at Meridian** **23h18m30s** 5.3mag az:180.0° S h:18.7°<br>**Culmination** **23h22m22s** **5.1mag** az:231.0° **SW** **h:33.1°** distance: 1763.0km height above Earth: 1109.5km elevation of Sun: -10° angular velocity: 0.25°/s<br>**Disappears** **23h30m59s** 9.9mag az:303.4° WNW horizon |
| 23h23m23s | Iridium 53 | <br>Flare from MMA1 (Right antenna) **Magnitude=-7.1mag**<br>Azimuth= 51.1° NE altitude= 46.2° in constellation Cepheus<br>RA=21h18.0m Dec=+55°35'<br>Flare angle=0.03°<br>**Flare center line, closest point** →MapIt: Longitude=2.417°W Latitude=+47.270° (WGS84) **Distance=0.7 km** Azimuth= 90.5° E Peak Magnitude=-7.2mag<br>Satellite above: longitude=4.6°E latitude=+50.7° height above Earth=784.6 km distance to satellite=1036.7 km<br>Altitude of Sun=-10.6° |
| 23h28m35s | Cosmos 1980 Rocket (19650 1988-102-B)<br>→Ground track<br>→Star chart | <br>**Appears** **23h20m55s** 9.1mag az:337.4° NNW horizon<br>**at Meridian** **23h25m12s** 6.3mag az: 0.0° N h:16.7°<br>**Culmination** **23h28m35s** **4.4mag** az: 48.4° **NE** **h:28.5°** distance: 1525.7km height above Earth: 852.8km elevation of Sun: -11° angular velocity: 0.27°/s<br>**Disappears** **23h33m39s** 4.9mag az:108.6° ESE h:9.3° |
| 23h28m53s | Cosmos 1263 Rocket (12389 | <br>**Appears** **23h23m30s** 8.0mag az:359.5° N horizon<br>**at Meridian** **23h23m40s** 7.9mag az: 0.0° N |

| | | |
|---|---|---|
| | 1981-033-B)<br>→Ground track<br>→Star chart | h:1.0°<br>**Culmination 23h28m53s 3.7mag** az: 77.0° **ENE h:34.6°**<br>distance: 819.5km height above Earth: 498.4km elevation of Sun: -11° angular velocity: 0.52°/s<br>**Disappears 23h31m23s** 4.4mag az:135.7° SE h:16.6°<br>Time uncertainty of about 11 seconds |

21 Items/Events: Export to Outlook/iCal Print E-mail

Used satellite data set is from 9 July 2014

Hide glossary

## Glossary:

**Altitude/alt/h**

Angular separation of the object from the local mathematical horizon. This accounts for refraction as well.

**Appears**

Local time at which the satellite appears visually. The first figure indicates the **visual brightness** of the object. The smaller the number, the brighter and more eye-catching it appears to an observer. The units are astronomical magnitudes [m]. **Azimuth** is given in degrees counting from geographic north clockwise to the east direction. The three-character direction code is given as well. In case the satellite exits from the Earth shadow and comes into the glare of the Sun, the elevation above horizon is given in degrees for this event. If this figure is omitted, the satellite is visible straight from the horizon.

**at Meridian**

Time of the transit of the meridian, i.e. the satellite is due South or due North. At this time, the satellite will not reach its highest point of the pass. Look for culmination.

**Azimuth/az**


Azimuth direction of the object is given in degrees counting from geographic north (0°) clockwise to the east direction. East is 90°, south 180°, and west 270°. The three-character direction code is given as well. For example, NNW stands for north-north-west.

**Culmination**

Time at which the satellite reaches his highest point in the sky as seen from the observer. For description of the figures see **Appears**.

Visually "better" passes of satellites are indicated by highlighting the information. The selection within the list of all possible transits is coupled with the observer level, the daylight, and several other conditions.

**Dec., declination, DE**

One coordinate used to indicate the position on the sky. It is the angular distance of the object from the celestial equator. North pole, close to Polaris, is 90° north.

**Disappears**

Local time of visual disappearance of the satellite. This may either be the time at which the satellite moves below the observer's horizon or the entry of the object in the shadow of Earth (the elevation is given for this event). The low Earth orbiting (LEO) satellites are usually visible for about 10 seconds more than the listed time, when they start fading rapidly.

**Flare angle**

The angle between the direction of the mirrored image of the Sun and the observer. For bright flares, this angle must be as small as possible (i.e., the observer should be as close to the center line as possible).

**Flare**

The communication antennas and the solar panels reflect the sunlight almost as a perfect mirror. In case the observer lays within this reflected beam, the satellite suddenly appears very bright, as bright as the Moon in the first quarter; the light is even strong enough to cast shadows. Since the sunlight is bundled, the duration of the whole event is short, and lasts about 10 seconds. The indicated time is the center of the flare event; hence the satellite can be spotted some seconds earlier. Due to the shortness of the event, it is important to look in the right direction at the right time.

**Iridium**

Wireless worldwide communication system, which consists of 66 satellites that are in low Earth orbits. The user who has a rather small phone directly contacts one of the satellites, i.e., one of the three **Main Mission Antennas MMA** (the three panels in the bottom of the image with a size of about $1x2m^2$). The satellites constellation consists of 6 planes with 11 satellites each (and some spares). Hence, another Iridium satellite passes at about the same place in the sky every 8 minutes.

**Magnitude/Mag**

Brightness of an object considered as a point source of light, on a logarithmic scale.\ Visual limiting magnitude is about 6mag, whereas the brightest star Sirius reaches -1.4mag. The Hubble Space Telescope can image objects as dim as 29mag.

**R.A., right ascension, RA**
One coordinate used to indicate the position on the sphere. It is the angular distance of the object from the spring equinox measured along the celestial equator, expressed in hours of arc.

**Sat above**
Geographic coordinates of the sub-satellite point (in WGS84 coordinates). This is the point on Earth, from which the satellite is in the zenith at the indicated time. The altitude of the satellite from this point is given as "**alt**".

**Time and Date**
Date of validity of calculated output in local time and date, taking into account daylight saving time as well (see the current time zone on the left of the Earth icon on top right of almost all pages). The time is given as hours:minutes:seconds, or 00h00m00s. The time may also be rounded and given in decimal form, in order to correspond to the accuracy of the calculation: e.g., 10.1h means that the event will take place at about 5 minutes past 10 o'clock. This may also happen for days: 4.3d corresponds to the fourth day at around 7 o'clock. The start time is taken as selected by you, i.e., this is *not* necessarily at midnight. For intervals shorter than one day, decimal days are given. Times are given in 24 hour format (0h00m is midnight, 12h: noon, 18h: 6 pm.)

**WGS84 / Geographical Coordinates**
Geographical coordinates are given by the angles longitude (Lon), latitude (Lat), and altitude in meters (Alt). A place north of the equator at marked by N or +, places south of the equator by S or -. The longitude from the meridian of Greenwich is counted positive towards east (E). Places west from Greenwich are marked W or by -. The geographical coordinates refer to an ellipsoid, which fits the true shape of the Earth (geoid). The geoid corresponds to calm sea surface. The keyword "Geographic:" uses the local ellipsoid as reference system. WGS84 mark coordinates referring to the WGS84 ellipsoid. The difference in altitude to the geoid sums up to 100 meters and is called geoid undulation. This is corrected for when tagged "MSL" (mean sea level), such that the origin of the height system is at sea level.

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Intro | Calendar | Sun | Moon | Planets | Comets | Asteroids | Meteors | Deep-Sky | Satellites

ToC | Astro-Calendar | User Profile · Space Weather · Ocean Tides · Meteo · Graphical Day&Night Calendar · Weather Balloons · Islam. Prayer Times

→ Nightvision-Mode → E-mail & Alert Manager

**Select start of calculation:**

Date: 10 July 2014

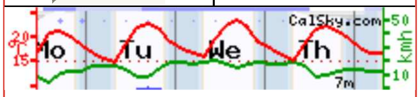
Time: 23 : 45 : 14 . 00 in TDT Now

**Select duration:** 1 Hour go!

geipan
*Le Pouliguen, France, France*

| | |
|---|---|
| Easting: | -2.4253 |
| Northing: | 47.2698 |
| Time zone: | CET/ CEST |

Astronomer




Weather · Sat-Image

Local Sponsors: Your name?

# The Calendar-Sky

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go!

## Thursday 10 July 2014

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| | | | |
|---|---|---|---|
| | | Observer Site | Le Pouliguen, France, France<br>WGS84: Lon: -2d25m31.34s Lat: +47d16m11.47s Alt: 56m<br>All times in CET or CEST (during summer) |
| | 23h45m14s | Echostar 14 Tk<br>(36501 2010-010-C)<br>→Ground track<br>→Star chart | <br>**Appears** **23h37m14s** 7.3mag az:261.4° W horizon<br>**Culmination** **23h41m05s** **3.2mag** az:349.5° **N** **h:65.0°**<br>distance: 392.4km height above Earth: 357.7km elevation of Sun: -12° angular velocity: 1.35°/s<br>**at Meridian** **23h41m08s** 3.2mag az: 0.0° N h:64.6°<br>**Disappears** **23h47m52s** 7.4mag az: 76.5° ENE horizon |
| | 23h48m45s | ADEOS 1 H-2 Rocket<br>(24279 1996-046-C)<br>→Ground track<br>→Star chart | <br>**Appears** **23h41m21s** 5.9mag az:177.1° S h:8.7°<br>**at Meridian** **23h42m55s** 5.5mag az:180.0° S h:15.8°<br>**Culmination** **23h48m45s** **4.4mag** az:258.3° **WSW** **h:62.6°**<br>distance: 1229.5km height above Earth: 1112.9km elevation of Sun: -13° angular velocity: 0.35°/s<br>**Disappears** **23h57m32s** 9.8mag az:343.4° NNW horizon |
| | 23h51m09s | Cosmos 1892 (18421 1987-088-A)<br>→Ground track<br>→Star chart | <br>**Appears** **23h49m05s** 4.7mag az:148.9° SSE h:21.2°<br>**Culmination** **23h51m09s** **4.0mag** az: 92.6° **E** **h:38.7°**<br>distance: 804.3km height above Earth: 531.1km elevation of Sun: -13° angular velocity: 0.56°/s<br>**Disappears** **23h57m02s** 8.2mag az: 16.6° NNE horizon |
| | 23h54m23s | **Echostar 16 Tk**<br>**(39010 2012-065-C)**<br>→Ground track<br>→Star chart | <br>**Appears 23h48m56s 9.0mag az:289.0° WNW horizon**<br>**Culmination 23h54m23s 2.5mag az:204.1° SSW h:62.5°**<br>**distance: 372.1km height above Earth: 332.3km elevation of Sun: -14° angular velocity: 1.40°/s**<br>**at Meridian 23h54m31s 2.4mag az:180.0° S h:60.3°**<br>**Disappears 23h55m13s 3.1mag az:134.2° SE h:32.5°**<br>**Time uncertainty of about 2 seconds** |
| | 23h55m42s | IGS 7A Rocket<br>(37955 2011-075-B)<br>→Ground track<br>→Star chart | <br>**Appears** **23h54m07s** 3.6mag az:118.6° ESE h:21.4°<br>**Culmination** **23h55m41s** **3.4mag** az: 70.4° **ENE** **h:32.8°**<br>distance: 775.7km height above Earth: 451.6km elevation of Sun: -14° angular velocity: 0.58°/s<br>**at Meridian** **23h59m46s** 7.4mag az: 0.0° N h:5.0°<br>**Disappears** **0h00m55s** 8.2mag az:356.1° N horizon<br>Time uncertainty of about 3 seconds |
| | 23h58m11s | ARGOS (25634 1999-008-A)<br>→Ground track<br>→Star chart | <br>**Appears** **23h53m24s** 5.6mag az:181.5° S h:12.6°<br>**Culmination** **23h58m11s** **4.4mag** az:259.0° **W** **h:57.0°**<br>distance: 964.3km height above Earth: 827.5km elevation of Sun: -14° angular velocity: 0.46°/s<br>**Disappears** **0h05m53s** 10.2mag az:342.6° NNW horizon |

## Friday 11 July 2014

| Time (24-hour clock) | Object (Link) | Event |
|---|---|---|

| | | |
|---|---|---|
| 0h01m02s | Cosmos 1697 Rocket (16182 1985-097-B)<br>→Ground track<br>→Star chart | <br>**Appears** 23h52m53s 10.2mag az:334.0° NNW horizon<br>**at Meridian** 23h59m26s 4.9mag az: 0.0° N h:45.1°<br>**Culmination 0h01m02s 3.6mag** az: 59.6° **ENE h:63.9°**<br>distance: 935.0km height above Earth: 851.3km elevation of Sun: -14° angular velocity: 0.44°/s<br>**Disappears** 0h04m55s 4.6mag az:136.9° SE h:20.4° |
| 0h01m30s | USA 160/NOSS 3-1A (26905 2001-040-A)<br>→Ground track<br>→Star chart | <br>**Appears** 23h59m23s 5.4mag az:136.2° SE h:18.7°<br>**Culmination 0h01m30s 5.3mag** az:109.2° **ESE h:22.3°**<br>distance: 1968.8km height above Earth: 973.9km elevation of Sun: -14° angular velocity: 0.22°/s<br>**Disappears** 0h09m37s 7.7mag az: 47.7° NE horizon |
| 0h02m51s | Yaogan 12 (37875 2011-066-B)<br>→Ground track<br>→Star chart | <br>**Appears** 0h00m42s 5.4mag az:168.0° SSE h:23.6°<br>**at Meridian** 0h02m37s 4.2mag az:180.0° S h:77.8°<br>**Culmination 0h02m51s 4.3mag** az:256.9° **WSW h:87.2°**<br>distance: 503.0km height above Earth: 502.5km elevation of Sun: -14° angular velocity: 0.89°/s<br>**Disappears** 0h08m35s 10.8mag az:347.6° NNW horizon |
| 0h03m46s | NOSS 3-3 Rocket (28538 2005-004-B)<br>→Ground track<br>→Star chart | <br>**Appears** 23h53m11s 10.2mag az:319.1° NW horizon<br>**at Meridian** 0h02m11s 4.8mag az: 0.0° N h:49.6°<br>**Culmination 0h03m46s 4.1mag** az: 42.6° **NE h:58.4°**<br>distance: 1365.6km height above Earth: 1196.6km elevation of Sun: -15° angular velocity: 0.29°/s<br>**Disappears** 0h09m56s 5.0mag az:119.3° ESE h:14.6° |
| 0h04m21s | **Tiangong-1 (37820 2011-053-A)**<br>→Ground track<br>→Star chart | <br>**Appears 23h59m34s 4.5mag az:255.7° WSW horizon**<br>**at Meridian 0h04m21s 0.8mag az:180.0° S h:32.8°**<br>**Culmination 0h04m21s 0.8mag az:179.7° S h:32.8°**<br>**distance: 604.4km height above Earth: 346.8km elevation of Sun: -15° angular velocity: 0.72°/s**<br>**Disappears 0h04m24s 0.7mag az:177.6° S h:32.8°**<br>**Time uncertainty of about 4 seconds** |
| 0h04m33s | Cosmos 1656 (15755 1985-042-A)<br>→Ground track<br>→Star chart | <br>**Appears** 23h56m20s 11.3mag az:333.4° NNW horizon<br>**at Meridian** 0h03m33s 5.2mag az: 0.0° N h:59.8°<br>**Culmination 0h04m33s 4.5mag** az: 61.7° **ENE h:74.7°**<br>distance: 882.0km height above Earth: 854.4km elevation of Sun: -15° angular velocity: 0.47°/s<br>**Disappears** 0h08m21s 5.5mag az:144.5° SE h:21.7° |
| 0h05m07s | SL-24 DEB (39449 2013-066-AK)<br>→Ground track<br>→Star chart | <br>**Appears** 0h03m00s 4.6mag az:138.2° SE h:24.2°<br>**Culmination 0h05m07s 3.9mag** az: 71.9° **ENE h:52.1°**<br>distance: 693.6km height above Earth: 560.4km elevation of Sun: -15° angular velocity: 0.65°/s<br>**at Meridian** 0h08m02s 7.2mag az: 0.0° N h:16.8°<br>**Disappears** 0h11m12s 9.7mag az:351.5° N horizon |

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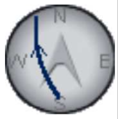
|---|---|---|
| | | Time uncertainty of about 3 seconds |
| 0h06m30s | USA 129/KH 12-3 (24680 1996-072-A)<br>→Ground track<br>→Star chart | <br>**Appears** **0h03m32s** 6.3mag az:218.3° SW h:5.3°<br>**Culmination** **0h06m30s** **6.5mag** az:270.8° **W** **h:15.0°**<br>distance: 1211.3km height above Earth: 414.7km elevation of Sun: -15° angular velocity: 0.37°/s<br>**Disappears** **0h11m20s** 11.1mag az:331.8° NNW horizon<br>Time uncertainty of about 106 minutes |
| 0h08m05s | **Cosmos 2082 Rocket (20625 1990-046-B)**<br>→Ground track<br>→Star chart | <br>**Appears 0h01m22s 5.3mag az:198.8° SSW h:5.3°**<br>**at Meridian 0h06m56s 2.9mag az:180.0° S h:56.7°**<br>**Culmination 0h08m05s 2.8mag az:113.9° ESE h:75.5°**<br>**distance: 880.7km height above Earth: 856.0km elevation of Sun: -15° angular velocity: 0.49°/s**<br>**Disappears 0h16m16s 7.0mag az: 28.9° NNE horizon** |
| 0h12m10s | **SJ 11-03 Rocket (37731 2011-030-B)**<br>→Ground track<br>→Star chart | <br>**Appears 0h09m15s 3.6mag az:181.8° S h:19.9°**<br>**Culmination 0h12m10s 2.6mag az:258.6° WSW h:62.0°**<br>**distance: 699.0km height above Earth: 624.8km elevation of Sun: -15° angular velocity: 0.64°/s**<br>**Disappears 0h18m37s 8.8mag az:344.1° NNW horizon** |
| 0h13m19s | USA 160-2/NOSS 3-1C (26907 2001-040-C)<br>→Ground track<br>→Star chart | <br>**Appears** **0h10m28s** 5.2mag az:155.2° SSE h:21.4°<br>**Culmination** **0h13m19s** **4.9mag** az:113.3° **ESE** **h:30.8°**<br>distance: 1640.9km height above Earth: 975.2km elevation of Sun: -15° angular velocity: 0.26°/s<br>**Disappears** **0h21m57s** 7.8mag az: 45.3° NE horizon |
| 0h15m43s | Landsat 5 (14780 1984-021-A)<br>→Ground track<br>→Star chart | <br>**Appears** **0h13m36s** 5.0mag az:161.8° SSE h:27.0°<br>**Culmination** **0h15m43s** **4.0mag** az: 75.2° **ENE** **h:84.8°**<br>distance: 564.7km height above Earth: 562.7km elevation of Sun: -16° angular velocity: 0.80°/s<br>**at Meridian** **0h16m08s** 4.4mag az: 0.0° N h:70.3°<br>**Disappears** **0h21m45s** 10.5mag az:347.4° NNW horizon |
| 0h16m02s | Yaogan 18 Rocket (39364 2013-059-B)<br>→Ground track<br>→Star chart | <br>**Appears** **0h13m21s** 4.8mag az:204.5° SSW h:14.1°<br>**Culmination** **0h16m02s** **4.5mag** az:263.0° **W** **h:31.2°**<br>distance: 899.9km height above Earth: 508.6km elevation of Sun: -16° angular velocity: 0.50°/s<br>**Disappears** **0h21m33s** 9.9mag az:338.2° NNW horizon<br>Time uncertainty of about 1 seconds |
| 0h17m35s | IGS 1A (27698 2003-009-A)<br>→Ground track<br>→Star chart | <br>**Appears** **0h17m35s** 4.2mag az: 66.0° ENE h:12.6°<br>**Disappears** **0h21m03s** 7.6mag az: 6.9° N horizon<br>Time uncertainty of about 2 minutes |
| 0h20m03s | H-2A R/B (39771 2014-029-F) | <br>**Appears** **0h17m35s** 4.2mag az: 96.0° E h:10.1°<br>**Culmination** **0h20m03s** **4.2mag** az: 60.2° **ENE** |

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| | | →Ground track<br>→Star chart | h:15.4°<br>distance: 1627.9km height above Earth: 610.4km elevation of Sun: -16° angular velocity: 0.27°/s<br>**Disappears** **0h25m27s** 7.5mag az: 2.3° N horizon |
| | 0h20m59s | Okean 1 Rocket (19275 1988-056-B)<br>→Ground track<br>→Star chart | <br>**Appears** **0h18m15s** 5.0mag az:181.9° S h:22.9°<br>**at Meridian** **0h19m01s** 4.5mag az:180.0° S h:32.7°<br>**Culmination** **0h20m59s** **3.7mag** az: 97.4° **E** **h:80.0°**<br>distance: 637.5km height above Earth: 628.7km elevation of Sun: -16° angular velocity: 0.70°/s<br>**Disappears** **0h27m38s** 8.9mag az: 10.8° N horizon |
| | 0h25m31s | Yaogan 10 LM Rocket (36835 2010-038-B)<br>→Ground track<br>→Star chart | <br>**Appears** **0h24m25s** 3.3mag az:207.0° SSW h:29.1°<br>**Culmination** **0h25m31s** **3.2mag** az:259.8° **W** **h:43.9°**<br>distance: 541.8km height above Earth: 387.0km elevation of Sun: -16° angular velocity: 0.84°/s<br>**Disappears** **0h30m23s** 9.5mag az:341.5° NNW horizon<br>Time uncertainty of about 4 seconds |
| | 0h28m33s | Cosmos 1689 Rocket (16111 1985-090-B)<br>→Ground track<br>→Star chart | <br>**Appears** **0h27m20s** 3.6mag az:149.9° SSE h:37.3°<br>**Culmination** **0h28m33s** **3.2mag** az: 75.2° **ENE** **h:72.0°**<br>distance: 497.4km height above Earth: 474.9km elevation of Sun: -17° angular velocity: 0.91°/s<br>**at Meridian** **0h29m50s** 5.2mag az: 0.0° N h:36.5°<br>**Disappears** **0h34m10s** 9.8mag az:349.6° N horizon |
| | 0h29m50s | **ADEOS 2 H2A Rocket (27601 2002-056-E)**<br>→Ground track<br>→Star chart | <br>**Appears 0h26m34s 3.8mag az:160.3° SSE h:25.4°**<br>**Culmination 0h29m50s 2.9mag az: 74.1° ENE h:84.3°**<br>**distance: 849.6km height above Earth: 845.9km elevation of Sun: -17° angular velocity: 0.52°/s**<br>**at Meridian 0h30m30s 3.3mag az: 0.0° N h:69.8°**<br>**Disappears 0h37m41s 9.1mag az:347.0° NNW horizon** |
| | 0h30m48s | Pleiades 1B (39019 2012-068-A)<br>→Ground track<br>→Star chart | <br>**Appears** **0h27m49s** 4.8mag az:190.7° S h:21.1°<br>**Culmination** **0h30m48s** **4.1mag** az:260.0° **W** **h:52.1°**<br>distance: 866.5km height above Earth: 703.9km elevation of Sun: -17° angular velocity: 0.51°/s<br>**Disappears** **0h37m45s** 10.2mag az:342.4° NNW horizon |
| | 0h31m12s | Cosmos 921 Rocket (10096 1977-055-B)<br>→Ground track<br>→Star chart | <br>**Appears** **0h24m42s** 10.4mag az:342.4° NNW horizon<br>**at Meridian** **0h29m41s** 5.6mag az: 0.0° N h:37.9°<br>**Culmination** **0h31m12s** **3.8mag** az: 68.9° **ENE** **h:66.0°**<br>distance: 655.0km height above Earth: 603.5km elevation of Sun: -17° angular velocity: 0.64°/s<br>**Disappears** **0h33m07s** 4.4mag az:142.0° SE h:31.5° |
| | 0h32m29s | Terra (25994 1999-068-A)<br>→Ground track<br>→Star chart | <br>**Appears** **0h29m28s** 3.8mag az:192.9° SSW h:20.6°<br>**Culmination** **0h32m29s** **3.2mag** az:260.5° **W** **h:49.5°**<br>distance: 900.1km height above Earth: 708.6km elevation |

| | | | |
|---|---|---|---|
| | | | of Sun: -17° angular velocity: 0.49°/s<br>**Disappears** **0h39m27s** 9.2mag az:342.0° NNW horizon |
| | 0h33m51s | USA 238-B/NOSS-3 6(B) (38773 2012-048-P)<br>→Ground track<br>→Star chart | <br>**Appears** **0h24m41s** 10.0mag az:313.8° NW horizon<br>**at Meridian** **0h32m07s** 7.2mag az: 0.0° N h:26.0°<br>**Culmination** **0h33m51s** **6.5mag** az: 23.9° **NNE** **h:28.8°**<br>distance: 1888.7km height above Earth: 1094.8km<br>elevation of Sun: -17° angular velocity: 0.22°/s<br>**Disappears** **0h42m45s** 7.0mag az: 94.1° E horizon |
| | 0h33m56s | USA 238/NOSS-3 6(A) (38758 2012-048-A)<br>→Ground track<br>→Star chart | <br>**Appears** **0h24m46s** 10.0mag az:313.7° NW horizon<br>**at Meridian** **0h32m13s** 7.2mag az: 0.0° N h:26.0°<br>**Culmination** **0h33m56s** **6.5mag** az: 23.8° **NNE** **h:28.7°**<br>distance: 1891.9km height above Earth: 1095.6km<br>elevation of Sun: -17° angular velocity: 0.22°/s<br>**Disappears** **0h42m50s** 7.0mag az: 94.0° E horizon |
| | 0h34m34s | NOSS 3-4 Rocket (31702 2007-027-B)<br>→Ground track<br>→Star chart | <br>**Appears** **0h26m25s** 8.8mag az:315.5° NW horizon<br>**Culmination** **0h34m34s** **3.8mag** az:240.5° **WSW** **h:42.6°**<br>distance: 1269.6km height above Earth: 919.7km elevation of Sun: -17° angular velocity: 0.32°/s<br>**Disappears** **0h37m59s** 4.2mag az:183.4° S h:22.7° |
| | 0h43m26s | Cosmos 1300 Rocket (12786 1981-082-B)<br>→Ground track<br>→Star chart | <br>**Appears** **0h41m01s** 5.3mag az:193.3° SSW h:26.8°<br>**Culmination** **0h43m26s** **4.3mag** az:279.3° **W** **h:82.3°**<br>distance: 638.5km height above Earth: 633.3km elevation of Sun: -18° angular velocity: 0.70°/s<br>**at Meridian** **0h44m35s** 5.5mag az: 0.0° N h:49.7°<br>**Disappears** **0h50m08s** 9.7mag az: 9.1° N horizon |

33 Items/Events: Export to Outlook/iCal Print E-mail

Used satellite data set is from 9 July 2014

☐ Hide glossary

## Glossary:

**Appears**
: Local time at which the satellite appears visually. The first figure indicates the **visual brightness** of the object. The smaller the number, the brighter and more eye-catching it appears to an observer. The units are astronomical magnitudes [m]. **Azimuth** is given in degrees counting from geographic north clockwise to the east direction. The three-character direction code is given as well. In case the satellite exits from the Earth shadow and comes into the glare of the Sun, the elevation above horizon is given in degrees for this event. If this figure is omitted, the satellite is visible straight from the horizon.

**at Meridian**
: Time of the transit of the meridian, i.e. the satellite is due South or due North. At this time, the satellite will not reach its highest point of the pass. Look for culmination.

**Azimuth/az**
: Azimuth direction of the object is given in degrees counting from geographic north (0°) clockwise to the east direction. East is 90°, south 180°, and west 270°. The three-character direction code is given as well. For example, NNW stands for north-north-west.


**Culmination**
: Time at which the satellite reaches his highest point in the sky as seen from the observer. For description of the figures see **Appears**.

Visually "better" passes of satellites are indicated by highlighting the information. The selection within the list of all possible transits is coupled with the observer level, the daylight, and several other conditions.

**Disappears**

Local time of visual disappearance of the satellite. This may either be the time at which the satellite moves below the observer's horizon or the entry of the object in the shadow of Earth (the elevation is given for this event). The low Earth orbiting (LEO) satellites are usually visible for about 10 seconds more than the listed time, when they start fading rapidly.

**Time and Date**

Date of validity of calculated output in local time and date, taking into account daylight saving time as well (see the current time zone on the left of the Earth icon on top right of almost all pages). The time is given as hours:minutes:seconds, or 00h00m00s. The time may also be rounded and given in decimal form, in order to correspond to the accuracy of the calculation: e.g., 10.1h means that the event will take place at about 5 minutes past 10 o'clock. This may also happen for days: 4.3d corresponds to the fourth day at around 7 o'clock. The start time is taken as selected by you, i.e., this is *not* necessarily at midnight. For intervals shorter than one day, decimal days are given. Times are given in 24 hour format (0h00m is midnight, 12h: noon, 18h: 6 pm.)

**WGS84 / Geographical Coordinates**

Geographical coordinates are given by the angles longitude (Lon), latitude (Lat), and altitude in meters (Alt). A place north of the equator at marked by N or +, places south of the equator by S or -. The longitude from the meridian of Greenwich is counted positive towards east (E). Places west from Greenwich are marked W or by -. The geographical coordinates refer to an ellipsoid, which fits the true shape of the Earth (geoid). The geoid corresponds to calm sea surface. The keyword "Geographic:" uses the local ellipsoid as reference system. WGS84 mark coordinates referring to the WGS84 ellipsoid. The difference in altitude to the geoid sums up to 100 meters and is called geoid undulation. This is corrected for when tagged "MSL" (mean sea level), such that the origin of the height system is at sea level.

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