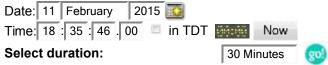


Select start of calculation:

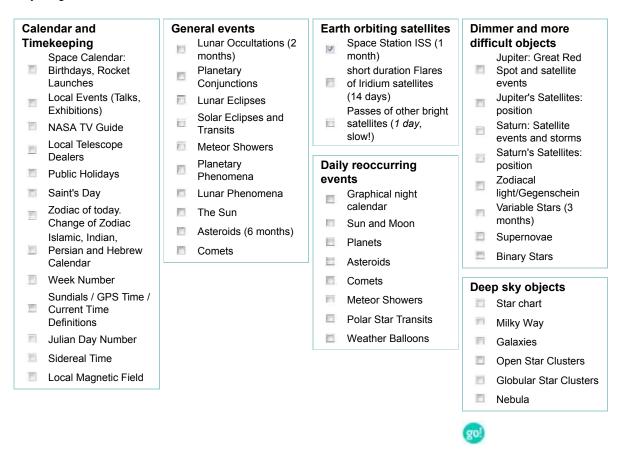




The Calendar-Sky

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.



Wednesday 11 February 2015

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

1 sur 4 13/02/2015 16:15

8	Observer Site	St Nicolas 22, France WGS84: Lon: +6d37m11.12s Lat: +49d11m24.52s Alt: 299m All times in CET or CEST (during summer)
⁵⁰ 18h36m49.31s	ISS	Close to Venus. Separation=1.191° Position Angle=135.8°, Position angle vertex=99.4° Angular diameter=21.6" size=109.0m x 73.0m x 27.5m Satellite at Azimuth=243.4° WSW Altitude= 13.1° Distance=1280.7 km Magnitude=1.0mag In a clock-face concept, the satellite will seem to move toward 11:41 Angular Velocity=8.0'/s Centerline, closest point →Map: Longitude= 6°46'05"E Latitude=+48°58'12" (WGS84) Distance=26.75 km Azimuth=156.2° SSE Path direction= 66.2° ENE ground speed=13.460 km/s width=0.1 km max. duration=0.0 s Sun elevation=-9° Elongation from Sun=26°
⁹ 18h37m19.67s	ISS	Close to Mars. Separation=0.045° Position Angle=136.2°, Position angle vertex=100.6° Angular diameter=25.6" size=109.0m x 73.0m x 27.5m Satellite at Azimuth=242.7° WSW Altitude= 17.7° Distance=1078.5 km Magnitude=0.3mag In a clock-face concept, the satellite will seem to move toward 11:39 Angular Velocity=10.6'/s Centerline, closest point →Map: Longitude= 6°37'29"E Latitude=+49°10'59" (WGS84) Distance=0.86 km Azimuth=155.9° SSE Path direction= 65.8° ENE ground speed=11.131 km/s width=0.0 km max. duration=0.0 s Sun elevation=-9° Elongation from Sun=31°
^{SS} 18h39m39s	ISS →Ground track →Star chart	Appears 18h34m20s 3.3mag az:244.9° WSW horizon at Meridian 18h39m34s -4.0mag az:180.0° S h:77.2° Culmination 18h39m39s -4.1mag az:157.8° SSE h:78.2° distance: 415.6km height above Earth: 407.6km elevation of Sun: -9° angular velocity: 1.02°/s Disappears 18h42m25s -2.3mag az: 72.3° ENE h:13.9°

4 Items/Events: 🥦 Export to Outlook/iCalu 🛅 Print 📨 E-mail

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.

2 sur 4 13/02/2015 16:15

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.

Close to Moon/Sun

The satellite is closer than 1.5 degrees from the center of the Moon or the Sun, but the satellite does not cross in front of the Moon/Sun. The direction and distance to the center line on Earth is given. For the Sun, move to the indicated center line position and observer with proper equipment. By no means observe the Sun without special filters!

Close to...

The Moon or main object appears close to the listed star or planet. These events may be useful for reasons of 'near miss' or to make it easier to find the fainter object in the sky. Usually, such constellations give a nice view.

Clock-face Direction

In a simple clock-face coordinate system with the clock face superimposed on the satellite itself, with 12:00 o'clock being at the top and 9:00 o'clock being at the left, the satellite will seem to move toward the given direction. This number is helpful when observing with binoculars.

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.

Elongation

The elongation is the angular separation a celestial body and the central body (Sun, for moons: Jupiter or Saturn), as seen from the Earth mass center.

International Space Station ISS

The manned ISS is according to NASA the biggest and most complex scientific project in history. During twilight passed, the space station is easily seen by everyone as a strikingly bright and silently running star. It crosses the sky in a few minutes basically from west to east.

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.

Position Angle rel. Vertex

Angle, defining a position on an apparent disk. It is counted around the reference points (center of disk) from local up, *zenith* direction 0° to east (left) 90°, south 180° to west (right) 270° in counter clockwise direction.

Position Angle / PA

Angle, defining a position on an apparent disk or the position of e.g. a dimmer star (or the anti-solar point for lunar eclipses) with regard of the main star or the center of disk. It is counted around the reference points (center of disk/brighter star) from *celestial north* direction 0° to east (left) 90°, south 180° to west (right) 270° in counter clockwise direction.

Separation

Angular distance between the centers of disks of two objects. For eclipses: the Sun and the Moon. For occultations: Moon/satellite and Star/Planet. For binary stars: Star/Star

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

3 sur 4 13/02/2015 16:15

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.

🦱 Тор

This material is ©1998-2015 by Arnold Barmettler (Imprint / Privacy policy / Disclaimers).

Create new default account/Logout

Hard copies may be made for personal use only. No electronic copy may be located elsewhere for public access. All pages are dynamically generated. The usage of web copy tools is strictly prohibited. Commercial usage of the data only with written approval by the author. If you have any questions or comments, or plan to use results from *CalSky* in your publications or products, please contact us by e-mail. Credits. Dieser Service wird in der Schweiz entwickelt und betrieben; Sie können uns auch gerne auf Deutsch schreiben.

Software Version: 11 February 2015 Database updated 12 min ago

Current Users: 304

13 Feb 2015, 15:15 UTC 595 minutes left for this session 11 / Mode for our sponsors

13/02/2015 16:15 4 sur 4