

[Intro](#) [Calendar](#) [Sun](#) [Moon](#) [Planets](#) [Comets](#) [Asteroids](#) [Meteors](#) [Deep-Sky](#) [Satellites](#)



[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:

Time: : : . in TDT

Select duration:

geipan St Nicolas 22, France 		
Easting:	6.6197	
Northing:	49.1901	
Time zone:	CET/CEST	
<input type="text" value="Astronomer"/>		Local Sponsors: Your name?

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.

<p>Calendar and Timekeeping</p> <ul style="list-style-type: none"> <input type="checkbox"/> Space Calendar: Birthdays, Rocket Launches <input type="checkbox"/> Local Events (Talks, Exhibitions) <input type="checkbox"/> NASA TV Guide <input type="checkbox"/> Local Telescope Dealers <input type="checkbox"/> Public Holidays <input type="checkbox"/> Saint's Day <input type="checkbox"/> Zodiac of today. Change of Zodiac <input type="checkbox"/> Islamic, Indian, Persian and Hebrew Calendar <input type="checkbox"/> Week Number <input type="checkbox"/> Sundials / GPS Time / Current Time Definitions <input type="checkbox"/> Julian Day Number <input type="checkbox"/> Sidereal Time <input type="checkbox"/> Local Magnetic Field 	<p>General events</p> <ul style="list-style-type: none"> <input type="checkbox"/> Lunar Occultations (2 months) <input type="checkbox"/> Planetary Conjunctions <input type="checkbox"/> Lunar Eclipses <input type="checkbox"/> Solar Eclipses and Transits <input type="checkbox"/> Meteor Showers <input type="checkbox"/> Planetary Phenomena <input type="checkbox"/> Lunar Phenomena <input type="checkbox"/> The Sun <input type="checkbox"/> Asteroids (6 months) <input type="checkbox"/> Comets 	<p>Earth orbiting satellites</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Space Station ISS (1 month) <input type="checkbox"/> short duration Flares of Iridium satellites (14 days) <input type="checkbox"/> Passes of other bright satellites (1 day, slow!) <p>Daily reoccurring events</p> <ul style="list-style-type: none"> <input type="checkbox"/> Graphical night calendar <input type="checkbox"/> Sun and Moon <input type="checkbox"/> Planets <input type="checkbox"/> Asteroids <input type="checkbox"/> Comets <input type="checkbox"/> Meteor Showers <input type="checkbox"/> Polar Star Transits <input type="checkbox"/> Weather Balloons 	<p>Dimmer and more difficult objects</p> <ul style="list-style-type: none"> <input type="checkbox"/> Jupiter: Great Red Spot and satellite events <input type="checkbox"/> Jupiter's Satellites: position <input type="checkbox"/> Saturn: Satellite events and storms <input type="checkbox"/> Saturn's Satellites: position <input type="checkbox"/> Zodiacal light/Gegenschein <input type="checkbox"/> Variable Stars (3 months) <input type="checkbox"/> Supernovae <input type="checkbox"/> Binary Stars <p>Deep sky objects</p> <ul style="list-style-type: none"> <input type="checkbox"/> Star chart <input type="checkbox"/> Milky Way <input type="checkbox"/> Galaxies <input type="checkbox"/> Open Star Clusters <input type="checkbox"/> Globular Star Clusters <input type="checkbox"/> Nebula
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Wednesday 11 February 2015

Time (24-hour clock)	Object (Link)	Event
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	Observer Site	St Nicolas 22, France WGS84: Lon: +6d37m11.12s Lat: +49d11m24.52s Alt: 299m All times in CET or CEST (during summer)
 18h36m49.31s	 ISS	<p>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</p> <p>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°</p>
 18h37m19.67s	 ISS	<p>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</p> <p>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°</p>
 18h39m39s →Ground track →Star chart	 ISS 	<p>Appears 18h34m20s 3.3mag az:244.9° WSW horizon</p> <p>at Meridian 18h39m34s -4.0mag az:180.0° S h:77.2°</p> <p>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</p> <p>Disappears 18h42m25s -2.3mag az: 72.3° ENE h:13.9°</p>

4 Items/Events:  Export to Outlook/iCal  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.

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

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.

 [Top](#)

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