Dear CalSky user

You made a contribution to CalSky some time ago - let me say thank you again! The clocks tick on and your ad-free, extended usage of CalSky recently expired.

I trust that you are still happy with my service. It would be great if you could provide further sponsorship and thus help to ensure the ongoing availability of this service. You can again use the portal for a longer period at a time. Please find details on **this page**.

I hope you continue to enjoy using CalSky!

Arnold Barmettler, CalSky.com

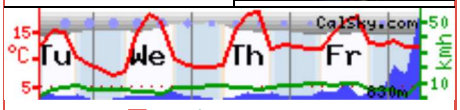
Please **click here to delete this message**. You can find the link to the sponsor page just below the yellow box with the small Earth icon that appears on almost all CalSky pages.

Select start of calculation:
Date: 17 August 2013
Time: 22 : 30 : 00 Now
Select duration: 1 Hour go!

geipan
pontarlier, France

Easting:	6.3542
Northing:	46.9041
Time zone:	CET/ CEST

Hobby



Weather · Sat-Image

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.

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

General events
- ☐ Lunar Occultations (2 months)
- ☑ Planetary Conjunctions
- ☐ Lunar Eclipses
- ☐ Solar Eclipses and Transits
- ☐ Meteor Streams
- ☑ Planetary Phenomena
- ☑ Lunar Phenomena
- ☐ The Sun
- ☑ Asteroids (6 months)

Earth orbiting satellites
- ☑ Space Station ISS (1 month)
- ☐ short duration Flares of Iridium satellites (14 days)
- ☐ Passes of other bright satellites (*7 days*, slow!)

Daily reoccurring events
- ☑ Sun and Moon
- ☑ Planets
- ☐ Asteroids
- ☐ Comets

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)
- ☐ Supernovae
- ☐ Binary Stars

- ☐ Week Number
- ☐ Sundials / GPS Time / Current Time Definitions
- ☐ Julian Day Number
- ☐ Sidereal Time
- ☐ Local Magnetic Field

- ☐ Comets

- ☐ Meteor Streams
- ☐ Polar Star Transits
- ☐ Weather Balloons

Deep sky objects

- ☐ Milky Way
- ☐ Galaxies
- ☐ Open Star Clusters
- ☐ Globular Star Clusters
- ☐ Nebula

go!

Saturday 17 August 2013

Time (24-hour clock)	Object (Link)	Event
	Observer Site	pontarlier, France WGS84: Lon: +6d21m15.27s Lat: +46d54m14.77s Alt: 881m All times in CET or CEST (during summer)
22.5h	♄ Saturn	Magnitude= 0.7mag Best seen from 21.2h -23.3h (h_{top}=19° at SW at 21.2h) (in constellation Virgo) RA=14h17m38s Dec=-11°19.8' (J2000) Distance=10.131AU Elongation= 71° Diameter=16.3" planetocentric latitude of the Earth=17.8°
22h33.4m	Moon	Transit Altitude=+23.5° (in constellation Sagittarius) Phase k=85.6%
22h41m	Sun	End astronomical twilight
23h15m18s	ISS →Ground track →Star chart	Appears 23h10m32s 1.8mag az:294.6° WNW horizon Disappears 23h15m18s -3.2mag az:262.5° W h:47.1° 
23h21.0m	♄ Saturn	Set Azimuth=253.8°, WSW (in constellation Virgo)

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

Used satellite data set is from 17 August 2013

☐ 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.

Astronomical Twilight
The times are the moments of beginning/end of the astronomical twilight, i.e., the moments the Sun reaches a depression of 18° below the horizon. If the Sun is below this angle, no brightening of the sky can be observed.

Azimuth/az
Azimuth direction of the object is given in degrees counting from geographic north (0°) clockwise to t he 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.

Best seen between / h_{max}
This is the best visibility time interval of the object, and the time is rounded to the next decimal hour; e.g. 6.4h corresponds to about 6:15 (hh:mm) to 6:20, and 18.9h to about 18:50 to 18:55. The calculation takes into account the magnitude of the object (required elevation above horizon), and the elevation of the Sun. The time is given in local civil time (LCT), i.e., the time zone and definitions as selected by you. h_{max} is the maximum altitude over the horizon, that the object reaches during this time period.

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.

Diameter
Diameter is the geocentric apparent angular diameter of a celestial object (topocentric for artificial satellites). The value is given in seconds

of arc for planets and satellites, and in minutes of arc for Sun and Moon.

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.

J2000, precession, nutation
The plains of ecliptic and equator shift with time by perturbations from the Sun, Moon and planets. The long-term shift is called precession; the short periodic variations are called nutation. The given celestial coordinates are referred to the true direction of the vernal equinox and the true obliquity of the ecliptic to the standard reference time 1 January 2000. For this date many star charts and coordinate tables are printed.

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.

Phase
Ratio of the illuminated fraction of the apparent planetary or lunar disk to its entire area.

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.

Rise, Transit, Culmination, Set
Rise and set times are for a mathematical horizon. Transit is the moment when the celestial object crosses the south meridian (for the northern hemisphere, north otherwise), i.e., it stands exactly in south (north) direction. There it reaches (for objects other than stars: almost) its highest point on its diurnal journey. Culmination is the event of the highest point. Times are listed only if they fall within the chosen interval, starting at the start time. Missing values indicate that the event does not take place at the underlying interval.

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

Software Version: 27 September 2013
Database updated 15 min ago
Current Users: 137

1 Oct 2013, 13:47 UTC
589 minutes left for this session

☐ Week Number
☐ Sundials / GPS Time / Current Time Definitions
☐ Julian Day Number
☐ Sidereal Time
☐ Local Magnetic Field

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