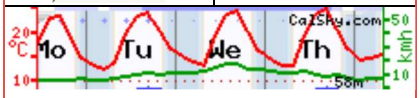
Select start of calculation:
Date: 30 July 2014
Time: 23 : 00 : 14 . 00 in TDT Now
Select duration: 30 Minutes go!

geipan
Tours, France, France
Easting: 0.6848
Northing: 47.3941
Time zone: CET/ CEST
Astronomer



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
- 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
- Space Station ISS (1 month)
- short duration Flares of Iridium satellites (14 days)
- 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)
- Supernovae
- Binary Stars

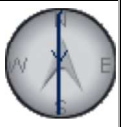
Deep sky objects
- Star chart
- Milky Way
- Galaxies
- Open Star Clusters
- Globular Star Clusters
- Nebula

go!

Wednesday 30 July 2014

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

	Observer Site	Tours, France, France WGS84: Lon: +0d41m05.42s Lat: +47d23m38.92s Alt: 105m All times in CET or CEST (during summer)
23h06m26s	SJ-11-06 Rocket (39625 2014-014-B) →Ground track →Star chart	**Appears 23h03m37s 4.1mag az:171.0° S h:15.6°** **at Meridian 23h05m24s 2.7mag az:180.0° S h:44.1°** **Culmination 23h06m26s 2.5mag az:256.4° WSW h:76.6°** **distance: 513.2km height above Earth: 500.4km elevation of Sun: -13° angular velocity: 0.88°/s** **Disappears 23h12m18s 8.4mag az:345.1° NNW horizon**
23h10m40s	Cosmos 1315 (12903 1981-103-A) →Ground track →Star chart	**Appears 23h05m21s** 9.3mag az:347.9° NNW horizon **Culmination 23h10m40s 3.4mag** az:259.6° **W h:86.1°** distance: 423.4km height above Earth: 422.6km elevation of Sun: -14° angular velocity: 1.01°/s **at Meridian 23h11m01s** 3.3mag az:180.0° S h:69.1° **Disappears 23h12m40s** 4.8mag az:171.8° S h:21.7°
23h14m13s	MOS 1-A Rocket (17528 1987-018-B) →Ground track →Star chart	**Appears 23h10m53s** 5.3mag az:164.1° SSE h:17.6° **Culmination 23h14m13s 3.9mag** az: 76.0° **ENE h:86.8°** distance: 664.8km height above Earth: 663.9km elevation of Sun: -14° angular velocity: 0.67°/s **at Meridian 23h14m32s** 4.1mag az: 0.0° N h:76.8° **Disappears 23h21m12s** 9.5mag az:348.2° NNW horizon
23h14m15s	Metop B	**Flare from fixed mounted left looking ASCAT Magnitude= 2.4mag** **Azimuth=337.3° NNW altitude= 15.9° in constellation Lynx** **RA= 8h24.3m Dec=+53°22'** **Flare angle=5.55° (Flare center not on earth)** **Satellite above: longitude=13°W latitude=+63° height above Earth=829.2 km distance to satellite=2038.8 km** **Altitude of Sun=-14.1°** **This is an experimental flare prediction. Brightness estimate may be unreliable. Please report a successful observation (Object/site coordinates/date/measured time/accuracy/magnitude).**
23h14m26s	USA 129/KH 12-3 (24680 1996-072-A) →Ground track →Star chart	**Appears 23h11m05s** 5.9mag az:179.2° S h:14.2° **at Meridian 23h11m18s** 5.8mag az:180.0° S h:15.8° **Culmination 23h14m26s 4.5mag** az:259.2° **W h:62.5°** distance: 639.5km height above Earth: 573.8km elevation of Sun: -14° angular velocity: 0.69°/s **Disappears 23h20m46s** 10.0mag az:344.7° NNW horizon Time uncertainty of about 168 minutes
23h14m48s	Aureole 3 (12848 1981-094-A) →Ground track →Star chart	**Appears 23h09m24s** 9.0mag az:356.8° N horizon **at Meridian 23h10m26s** 8.3mag az: 0.0° N h:4.9° **Culmination 23h14m48s 4.4mag** az: 78.8° **E h:45.0°** distance: 755.8km height above Earth: 554.6km elevation of Sun: -14° angular velocity: 0.57°/s

		Disappears **23h17m03s** 5.3mag az:139.9° SE h:23.3°
23h16m27s	Cosmos 540 Rocket (06324 1972-104-B) →Ground track →Star chart	**Appears** **23h10m32s** 6.5mag az:187.6° S h:6.0° **at Meridian** **23h13m20s** 5.3mag az:180.0° S h:23.1° **Culmination** **23h16m27s** **4.1mag** az:107.3° **ESE** **h:60.5°** distance: 855.7km height above Earth: 757.4km elevation of Sun: -14° angular velocity: 0.52°/s **Disappears** **23h23m56s** 8.1mag az: 25.6° NNE horizon 
23h16m31s	Iridium 41	Flare from MMA1 (Right antenna) **Magnitude=-0.3mag** Azimuth= 54.8° NE altitude= 39.9° in constellation Andromeda RA=23h13.6m Dec=+50°31' Flare angle=1.63° **Flare center line, closest point** →MapIt: Longitude=1.264°E Latitude=+47.392° (WGS84) **Distance=43.6 km** Azimuth= 90.1° E Peak Magnitude=-7.0mag Satellite above: longitude=9.8°E latitude=+51.0° height above Earth=784.5 km distance to satellite=1139.5 km Altitude of Sun=-14.3° 
23h16m50s	USA 173-2/NOSS 3-2C (28097 2003-054-C) →Ground track →Star chart	**Appears** **23h06m52s** 11.3mag az:318.8° NW horizon **Culmination** **23h16m50s** **4.7mag** az:233.0° **SW** **h:81.2°** distance: 1219.9km height above Earth: 1207.9km elevation of Sun: -14° angular velocity: 0.33°/s **at Meridian** **23h17m25s** 4.6mag az:180.0° S h:75.5° **Disappears** **23h22m41s** 5.8mag az:148.4° SSE h:19.4° 
23h16m56s	USA 216/SBSS 1 (37168 2010-048-A) →Ground track →Star chart	**Appears** **23h10m20s** 9.2mag az: 13.8° NNE horizon **Culmination** **23h16m56s** **4.7mag** az:103.3° **ESE** **h:81.1°** distance: 641.1km height above Earth: 634.1km elevation of Sun: -14° angular velocity: 0.65°/s **at Meridian** **23h17m51s** 4.9mag az:180.0° S h:55.5° **Disappears** **23h21m16s** 6.9mag az:191.3° SSW h:10.3° 
23h20m34s	**SL-4 R/B (40096 2014-041-B)** →Ground track →Star chart	**Appears** **23h20m34s** **2.9mag** **az: 60.7° ENE** **h:16.6°** **Disappears** **23h23m09s** **5.2mag** **az: 43.7° NE** **horizon** **Time uncertainty of about 3 seconds** 
23h20m54s	USA 194/NOSS 3-4A (31701 2007-027-A) →Ground track →Star chart	**Appears** **23h11m49s** 7.0mag az:203.7° SSW horizon **at Meridian** **23h18m47s** 4.7mag az:180.0° S h:41.4° **Culmination** **23h20m54s** **4.3mag** az:122.7° **ESE** **h:60.0°** distance: 1164.7km height above Earth: 1032.0km elevation of Sun: -15° angular velocity: 0.37°/s **Disappears** **23h30m08s** 7.6mag az: 42.2° NE horizon 
23h21m01s	USA 194-2/NOSS 3-4C (31708 2007-027-C) →Ground track →Star chart	**Appears** **23h11m56s** 7.0mag az:203.5° SSW horizon **at Meridian** **23h18m50s** 4.7mag az:180.0° S h:40.7° **Culmination** **23h21m01s** **4.3mag** az:122.5° **ESE** **h:59.6°** distance: 1170.0km height above Earth: 1032.5km elevation of Sun: -15° angular velocity: 0.37°/s 

		Disappears **23h30m15s** 7.6mag az: 42.2° NE horizon
23h21m11s	ADEOS 1 H-2 Rocket (24279 1996-046-C) →Ground track →Star chart	**Appears** **23h15m25s** 5.5mag az:175.8° S h:11.5° **at Meridian** **23h17m09s** 4.9mag az:180.0° S h:21.6° **Culmination** **23h21m11s** **4.0mag** az:257.5° **WSW** **h:65.5°** distance: 1010.6km height above Earth: 931.8km elevation of Sun: -15° angular velocity: 0.44°/s **Disappears** **23h29m08s** 9.1mag az:343.6° NNW horizon 
23h22m50s	Landsat 4 (13367 1982-072-A) →Ground track →Star chart	**Appears** **23h20m23s** 5.7mag az:168.3° SSE h:22.0° **at Meridian** **23h22m21s** 4.4mag az:180.0° S h:66.8° **Culmination** **23h22m50s** **4.5mag** az:255.9° **WSW** **h:84.0°** distance: 550.5km height above Earth: 547.8km elevation of Sun: -15° angular velocity: 0.81°/s **Disappears** **23h28m52s** 10.4mag az:346.0° NNW horizon 
23h23m35s	ALOS H2A Rocket (28932 2006-002-B) →Ground track →Star chart	**Appears** **23h17m36s** 7.8mag az: 8.2° N horizon **at Meridian** **23h20m21s** 6.7mag az: 0.0° N h:13.4° **Culmination** **23h23m35s** **4.4mag** az:289.9° **WNW** **h:45.2°** distance: 744.8km height above Earth: 548.1km elevation of Sun: -15° angular velocity: 0.57°/s **Disappears** **23h29m24s** 6.3mag az:211.0° SSW horizon 
23h26m37s	**SJ 11-03 Rocket (37731 2011-030-B)** →Ground track →Star chart	**Appears** **23h24m19s** **3.2mag** **az:145.6° SE** **h:25.5°** **Culmination** **23h26m37s** **2.3mag** **az: 72.7° ENE** **h:62.1°** **distance: 691.6km height above Earth: 618.7km elevation of Sun: -15° angular velocity: 0.65°/s** **at Meridian** **23h28m57s** **4.9mag** **az: 0.0° N** **h:25.7°** **Disappears** **23h33m07s** **7.9mag** **az:350.0° N** **horizon** 
23h28m46s	FOTON M4 (40095 2014-041-A) →Ground track →Star chart	**Appears** **23h28m46s** 4.4mag az: 55.4° NE h:22.4° **Disappears** **23h31m40s** 7.2mag az: 41.2° NE horizon Time uncertainty of about 1 seconds 

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

Used satellite data set is from 30 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.

Top

Create new default account/Logout

Software Version: 30 August 2014
Database updated 27 min ago
Current Users: 208, Runtime: 2.3s

1 Sep 2014, 14:29 UTC
598 minutes left for this session
30 days left in ad-free mode