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Select start of calculation:

 Date:

 Time: : : . in TDT
Select duration:

geipan
Plelo, France

Easting: -2.9461
Northing: 48.5558
Time zone: CET/
CEST

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Local Sponsors:

Bright Satellites






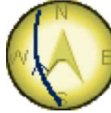

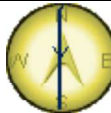


- Tracking of satellites all over the sky.
- Searching for satellites found within a certain area (given by celestial coordinates and diameter). This point is taken from the last stargazing geometry. To change the center and diameter, click [here](#) (field of view must be at least 1° and at most 90°). Satellites are sorted by ascending elongation from selected center point. For the listed events the conjunction must not take place during the selected time window, but the satellites must be within the search radius. If you are an astro photographer, you can also find the time interval where no LEO satellite will pass through your field of view.

 Magnitude cutoff used for the following list: Mag. (Manual selection)

 Visible or not: Calculate all passes, day or night, even if not optically visible

Thursday 3 October 2013

Time (24-hour clock)	Object (Link)	Event
	Observer Site	Plelo, France WGS84: Lon: -2d56m46.06s Lat: +48d33m21.14s Alt: 163m All times in CET or CEST (during summer)
19h43m31s	RS-15 Rocket (23440) 1994-085-B) →Ground track →Star chart	Appears 19h29m00s 8.6mag az:190.3° S at Meridian 19h35m28s 7.5mag az:180.0° S h:20.4° Culmination 19h43m31s 5.9mag az:114.4° ESE h:52.4° distance: 2339.2km height above Earth: 1975.1km elevation of Sun: +0° angular velocity: 10.5'/s Disappears 19h57m18s 7.6mag az: 38.9° NE horizon
19h43m42s	Yaogan 17A (39239) 2013-046-A) →Ground track →Star chart	Appears 19h34m02s 9.4mag az:317.6° NW at Meridian 19h42m48s 5.9mag az: 0.0° N h:63.1° Culmination 19h43m42s 5.6mag az: 44.8° NE h:70.3° distance: 1156.7km height above Earth: 1099.1km elevation of Sun: +0° angular velocity: 0.36°/s Disappears 19h53m22s 7.9mag az:131.5° SE horizon
19h43m51s	Yaogan 17C (39241) 2013-046-C) →Ground track →Star chart	Appears 19h34m10s 9.4mag az:317.6° NW at Meridian 19h43m03s 5.8mag az: 0.0° N h:66.2° Culmination 19h43m51s 5.6mag az: 45.5° NE h:72.9° distance: 1142.3km height above Earth: 1099.4km elevation of Sun: +0° angular velocity: 0.36°/s Disappears 19h53m31s 7.9mag az:132.9° SE horizon
19h44m00s	Yaogan 17B (39240) 2013-046-B) →Ground track →Star chart	Appears 19h34m19s 9.4mag az:317.6° NW at Meridian 19h43m06s 5.9mag az: 0.0° N h:63.3°

		Culmination 19h44m00s 5.6mag az: 44.8° NE h:70.5° distance: 1155.5km height above Earth: 1099.1km elevation of Sun: +0° angular velocity: 0.36°/s Disappears 19h53m40s 7.9mag az:131.6° SE horizon	
19h44m44s	 NOSS 3-2 Rocket (28096 2003-054-B) -Ground track -Star chart	Appears 19h35m04s 8.3mag az:227.8° SW horizon Culmination 19h44m44s 4.2mag az:315.0° NW h:71.6° distance: 1234.7km height above Earth: 1181.9km elevation of Sun: +0° angular velocity: 0.34°/s at Meridian 19h45m40s 4.0mag az: 0.0° N h:64.7° Disappears 19h55m23s 6.0mag az: 42.4° NE horizon	
19h45m34s	 CZ-4C R/B37D (39211 2013-037-D) -Ground track -Star chart	Appears 19h39m25s 6.6mag az:138.1° SE horizon Culmination 19h45m34s 4.3mag az: 67.1° ENE h:30.2° distance: 1067.5km height above Earth: 597.3km elevation of Sun: 0° angular velocity: 0.42°/s at Meridian 19h50m12s 6.5mag az: 0.0° N h:5.0° Disappears 19h51m23s 7.0mag az:355.6° N horizon	
19h48m34s	 Meteor 1-31 Rocket (12586 1981-065-B) -Ground track -Star chart	Appears 19h42m27s 7.2mag az:174.5° S horizon at Meridian 19h45m06s 6.2mag az:180.0° S h:13.3° Culmination 19h48m34s 4.8mag az:259.3° W h:60.0° distance: 643.5km height above Earth: 565.1km elevation of Sun: 0° angular velocity: 0.69°/s Disappears 19h54m41s 7.4mag az:344.4° NNW horizon	
19h49m10s	 Cosmos 2058 (20465 1990-010-A) -Ground track -Star chart	Appears 19h42m45s 7.3mag az:349.7° N horizon Culmination 19h49m10s 3.8mag az:261.2° W h:88.5° distance: 583.2km height above Earth: 583.2km elevation of Sun: -1° angular velocity: 0.72°/s at Meridian 19h49m23s 3.9mag az:180.0° S h:80.1° Disappears 19h55m29s 7.2mag az:172.6° S horizon	
19h49m14s	 Nadezhda 3 Rocket (21153 1991-019-B) -Ground track -Star chart	Appears 19h41m09s 7.8mag az:358.0° N horizon at Meridian 19h41m42s 7.6mag az: 0.0° N h:1.9° Culmination 19h49m14s 5.8mag az: 63.9° ENE h:23.1° distance: 1986.0km height above Earth: 1007.4km elevation of Sun: -1° angular velocity: 0.21°/s Disappears 19h57m16s 7.3mag az:129.4° SE horizon	

10 Items/Events:   

Used satellite data set is from 2 October 2013

 Hide glossary

Glossary:

Time

The local time in 24-hour format at which the satellite is visible at its best. The satellite may be observable *before* this time. 0:00 or 0h00m is midnight, 12h is noon, 18h is 6 pm. The time zone is the one indicated on the left of the Earth icon on top of (almost) each page. Daylight saving is applied automatically.

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.

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.

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.

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.



Magnitude/Mag:

The magnitude indicates the **visual brightness** of an object. The brightest star (Sirius) reaches -1.4m, whereas 6m is the limit of the unaided eye. Venus, the brightest planet, reaches -4m. The Moon at first quarter is -8m, about the same magnitude that the brightest Iridium flares can produce.

Object

The name and identification information of the satellite. Besides the name, the number in the catalog of the USSPACECOM is given (5-digits code), and the International Designator Code in the form launch year - launch number of the year - launch part (usually one launch produces several orbiting objects).

Spy Satellites:

Satellites with name **USA** are US military satellites (common names e.g., Keyhole KH, Lacrosse).

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!*

Crosses the disk of Moon/Sun:

The satellite passes in front of the Moon or the Sun; the event may be observed using a small telescope (equipped with special mylar filters for the Sun only!), especially if the event takes place in broad daylight. The direction and distance to the center line on Earth is given. Moon phases are not checked for. The timing may slightly change due to the quality and age of the used orbital elements and active orbit maintenance. *By no means observe the Sun without special filters!* Please feel free to report successful observations!

Separation

Angular distance of an object (e.g., star) with regard of the reference object (e.g., main star or center of moon), measured among the center of figures. Often, this value is given for the closest distance among two objects.

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.

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.

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.

Daylight pass

This satellite pass over the observer is taking place on broad daylight and cannot be observed without special equipment (automated guided telescope or radio ham equipment).

Radio pass

The satellite is not outside the shadow of Earth during the whole pass (hence not lighted by the Sun) and is therefore not visible. However, using radio equipment, the satellite can be detected.

Ascending/descending Orbit:

Satellites are orbiting around the earth center. Therefore the point on the Earth surface "below" the satellite (i.e., the sub-satellite point) crosses the equator twice every orbit. The part of the orbit with northernbound motion component is called ascending, and a southernbound motion is called descending.

Rise

The satellites rises above the horizon of the observer (cf. **Appear** for visual rising of the satellite).

Set

The satellites sets below the horizon of the observer, but may not have been visible before (cf. **Disappear**).

Side-look

Time at which the observer is passing exactly at the side of the satellite (as seen from the satellite).

Off-Nadir

Angle at which the observer appears from the nadir (down direction) as seen from the satellite.

Squint angle

Angle relative to the satellite orbit; flight direction is 0°. The angle is counted clockwise, with right looking at 90° and left looking at 270°.

Range

Distance to the satellite.

0-Doppler / Zero-Doppler

Time at which the range between satellite and observer does not change, i.e., the range rate is zero.

Forecasted Decay:

All Earth orbiting satellites are exposed to atmospheric drag, which lowers the orbit. Usually, this is countermeasured by frequent firings of the rocket engines - as long there is propulsion available. At an altitude of about 120 km, the objects are destroyed in the atmosphere by a fiery play; the over 100 km long light trace is visible even at daylight. Predictions however are difficult. CalSky calculates the evolution of the satellite elements and the time of final decay based on **SatEvo** by Alan Pickup.



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Software Version: 10 October 2013
Database updated 1 min ago
Current Users: 187

28 Oct 2013, 18:03 UTC
585 minutes left for this session / Mode for our
sponsors

