| 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
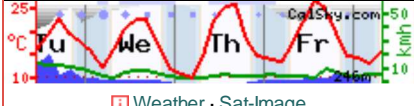
geipan
Les avenières, France

Easting: 5.5626
Northing: 45.6349
Time zone: CET/ CEST

Astronomer

Weather · Sat-Image
Local Sponsors: Your name?

Select start of calculation:
Date: 3   August   2014
Time: 22 : 20 : 24 . 00   ☐ in TDT   Now
Select duration:
30 Minutes   go!

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!
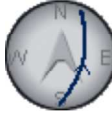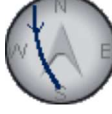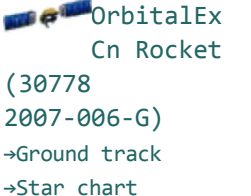
Sunday 3 August 2014

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

	Observer Site	Les avenières, France WGS84: Lon: +5d33m45.46s Lat: +45d38m05.69s Alt: 296m All times in CET or CEST (during summer)	
22h20m24s	Helios 2A Rocket (28499 2004-049-H) →Ground track →Star chart	**Appears** 22h10m55s 5.3mag az:163.8° SSE h:9.3° **Culmination** 22h15m09s **3.2mag** az: 75.4° **ENE h:86.8°** distance: 598.6km height above Earth: 598.1km elevation of Sun: -11° angular velocity: 0.75°/s **at Meridian** 22h15m26s 3.4mag az: 0.0° N h:77.6° **Disappears** 22h21m39s 8.5mag az:347.3° NNW horizon	
22h20m24s	USA 194/NOSS 3-4A (31701 2007-027-A) →Ground track →Star chart	**Appears** 22h04m18s 7.2mag az:208.8° SSW horizon **at Meridian** 22h12m24s 4.4mag az:180.0° S h:61.7° **Culmination** 22h13m27s **4.2mag** az:124.2° **SE** h:73.4° distance: 1069.6km height above Earth: 1031.6km elevation of Sun: -11° angular velocity: 0.40°/s **Disappears** 22h22m46s 7.4mag az: 40.1° NE horizon	
22h20m24s	USA 194-2/NOSS 3-4C (31708 2007-027-C) →Ground track →Star chart	**Appears** 22h04m24s 7.2mag az:208.6° SSW horizon **at Meridian** 22h12m28s 4.4mag az:180.0° S h:60.7° **Culmination** 22h13m34s **4.2mag** az:124.1° **SE** h:72.8° distance: 1073.0km height above Earth: 1032.1km elevation of Sun: -11° angular velocity: 0.40°/s **Disappears** 22h22m53s 7.4mag az: 40.1° NE horizon	
22h20m24s	USA 245/KH (39232 2013-043-A) →Ground track →Star chart	**Appears** 22h10m21s 6.6mag az:137.7° SE h:12.9° **Culmination** 22h15m01s **5.3mag** az: 71.3° **ENE** h:42.3° distance: 1098.1km height above Earth: 785.7km elevation of Sun: -11° angular velocity: 0.40°/s **at Meridian** 22h19m50s 8.3mag az: 0.0° N h:8.2° **Disappears** 22h21m36s 9.2mag az:354.8° N horizon Time uncertainty of about 7 seconds	
22h23m37s	**Progress M23M (39648 2014-018-A) (probably decayed/landed /docked)** →Ground track →Star chart	**Appears** 22h18m35s **6.2mag** **az:218.5° SW horizon** **at Meridian** 22h22m41s 3.4mag az:180.0° S h:28.2° **Culmination** 22h23m37s 2.9mag az:141.8° SE h:35.2° **distance: 651.9km height above Earth: 397.2km elevation of Sun: -12° angular velocity: 0.68°/s** **Disappears** 22h28m20s 5.8mag az: 66.9° ENE h:2.1° **Time uncertainty of about 4 seconds**	
22h24m32s	USA 29/DMSP 5D-2/F9 (18822 1988-006-A) →Ground track →Star chart	**Appears** 22h17m04s 9.5mag az: 20.2° NNE horizon **Culmination** 22h24m32s 6.2mag az: 98.2° **E** h:41.2° distance: 1144.7km height above Earth: 806.3km elevation of Sun: -13° angular velocity: 0.36°/s **Disappears** 22h29m04s 7.6mag az:166.7° SSE h:12.1°	
22h28m07s	Alouette 2 Rocket (01807 1965-098-C)	**Appears** 22h22m06s 9.6mag az:345.0° NNW horizon **Culmination** 22h28m07s **4.1mag** az:259.4° **W** h:71.9°	

	→Ground track →Star chart	distance: 534.0km height above Earth: 509.7km elevation of Sun: -13° angular velocity: 0.84°/s **at Meridian 22h30m00s 5.0mag az:180.0° S h:26.1°** **Disappears 22h31m14s 5.8mag az:176.0° S h:13.3°**

🛰 22h28m22s	🛰⊕🛰**USA
	240/OTV-
	3/X-37B
	(39025
	2012-071-A)**
	→Ground track
	→Star chart
		Appears 22h23m42s 6.4mag az:235.4° SW
		  horizon
		at Meridian 22h27m55s 3.1mag az:180.0° S
		  h:27.4°
		Culmination 22h28m22s 2.9mag az:161.0° SSE h:29.0°
		 distance: 653.6km height above Earth: 341.1km elevation
		of Sun: -13° angular velocity: 0.68°/s
		Disappears 22h28m52s 3.0mag az:140.1° SE h:27.1°

🛰 22h29m37s	🛰⊕🛰NOSS 2 (A)
	(10502
	1977-112-A)
	→Ground track
	→Star chart
		Appears 22h24m40s 12.6mag az:323.8° NW
		  horizon
		at Meridian 22h29m03s 6.5mag az: 0.0° N
		  h:53.8°
		Culmination 22h29m37s 5.8mag az: 51.0° NE h:65.4°
		 distance: 521.4km height above Earth: 477.8km elevation
		of Sun: -13° angular velocity: 0.84°/s
		Disappears 22h32m02s 7.2mag az:129.0° SE h:21.8°
		Time uncertainty of about 36 minutes

🛰 22h29m42s	🛰⊕🛰Okean 2
	(20510
	1990-018-A)
	→Ground track
	→Star chart
		Appears 22h23m15s 9.1mag az:353.6° N
		  horizon
		at Meridian 22h26m24s 7.4mag az: 0.0° N
		  h:16.1°
		Culmination 22h29m42s 4.2mag az: 79.3° E h:62.9°
		 distance: 658.4km height above Earth: 592.9km elevation
		of Sun: -13° angular velocity: 0.64°/s
		Disappears 22h32m40s 5.6mag az:157.3° SSE h:18.6°

🛰 22h32m29s	🛰⊕🛰Cosmos 44
	Rocket
	(00877
	1964-053-B)
	→Ground track
	→Star chart
		Appears 22h25m17s 10.7mag az:324.1° NW
		  horizon
		at Meridian 22h32m22s 4.0mag az: 0.0° N
		  h:84.7°
		Culmination 22h32m29s 3.9mag az: 54.9° NE h:87.0°
		 distance: 673.9km height above Earth: 673.3km elevation
		of Sun: -14° angular velocity: 0.62°/s
		Disappears 22h35m39s 5.1mag az:144.0° SE h:20.8°

🛰 22h34m47s	🛰⊕🛰Cosmos 1536
	(14699
	1984-013-A)
	→Ground track
	→Star chart
		Appears 22h31m30s 5.3mag az:171.8° S
		  h:14.4°
		Culmination 22h34m47s 3.5mag az: 95.0° E
		  h:58.0°
		 distance: 647.1km height above Earth: 557.3km elevation
		of Sun: -14° angular velocity: 0.69°/s
		Disappears 22h40m57s 8.0mag az: 13.0° NNE horizon

🛰 22h35m11s	🛰⊕🛰Cosmos 1939
	Rocket
	(19046
	1988-032-B)
	→Ground track
	→Star chart
		Appears 22h31m06s 5.9mag az:181.6° S
		  h:9.4°
		Culmination 22h35m11s 4.4mag az:260.1° W
		  h:53.6°
		 distance: 704.4km height above Earth: 579.9km elevation
		of Sun: -14° angular velocity: 0.63°/s
		Disappears 22h41m27s 9.3mag az:343.4° NNW horizon

🛰 22h35m15s	🛰⊕🛰Cosmos 1980 (19649 1988-102-A) →Ground track →Star chart	**Appears 22h27m07s** 10.3mag az:332.7° NNW horizon **Culmination 22h35m15s 4.5mag az:245.9° WSW** **h:83.3°** distance: 852.8km height above Earth: 847.9km elevation

		of Sun: -14° angular velocity: 0.48°/s at Meridian 22h35m45s 4.3mag az:180.0° S h:73.9° Disappears 22h39m36s 5.8mag az:159.5° SSE h:17.6°
🟢 22h36m35s	🛰️ Cosmos 2227 Rocket (22285 1992-093-B) →Ground track →Star chart	Appears 22h28m34s 5.7mag az:194.8° SSW horizon at Meridian 22h34m23s 3.5mag az:180.0° S h:37.0° Culmination 22h36m35s 2.8mag az:111.6° ESE h:65.9° distance: 921.8km height above Earth: 851.5km elevation of Sun: -14° angular velocity: 0.47°/s Disappears 22h44m41s 6.5mag az: 28.9° NNE horizon
🟢 22h37m26s	🛰️ ALOS H2A Rocket (28932 2006-002-B) →Ground track →Star chart	Appears 22h31m24s 7.4mag az: 13.0° NNE horizon at Meridian 22h37m15s 3.1mag az: 0.0° N h:80.6° Culmination 22h37m26s 3.0mag az:284.7° WNW h:87.6° distance: 543.6km height above Earth: 543.5km elevation of Sun: -14° angular velocity: 0.78°/s Disappears 22h42m08s 5.7mag az:196.0° SSW h:5.6°
🟢 22h38m56s	🛰️ Cosmos 2082 (20624 1990-046-A) →Ground track →Star chart	Appears 22h30m47s 7.3mag az:201.1° SSW horizon at Meridian 22h38m22s 4.4mag az:180.0° S h:72.4° Culmination 22h38m56s 4.4mag az:114.0° ESE h:82.7° distance: 866.7km height above Earth: 860.8km elevation of Sun: -14° angular velocity: 0.50°/s Disappears 22h47m08s 8.1mag az: 27.3° NNE horizon
🟢 22h40m11s	🛰️ Cosmos 2219 Rocket (22220 1992-076-B) →Ground track →Star chart	Appears 22h32m08s 8.9mag az:332.0° NNW horizon Culmination 22h40m11s 3.0mag az:246.9° WSW h:75.8° distance: 864.0km height above Earth: 840.9km elevation of Sun: -15° angular velocity: 0.48°/s at Meridian 22h41m19s 3.0mag az:180.0° S h:56.5° Disappears 22h44m26s 4.3mag az:163.9° SSE h:18.0°

🟢 22h41m27s	🛰️ ISS
	→Ground track
	→Star chart
		Appears 22h36m07s -0.1mag az:225.5° SW
		  horizon
		at Meridian 22h40m51s -3.7mag az:180.0° S
		   h:42.2°
		Culmination 22h41m27s -4.0mag az:144.7° SE h:48.4°
		 distance: 547.8km height above Earth: 419.5km elevation
		of Sun: -15° angular velocity: 0.81°/s
		Disappears 22h45m59s -0.8mag az: 65.6° ENE h:3.6°

🟢 22h43m58s	🛰️ Iridium 41	Flare from MMA1 (Right antenna) Magnitude=-1.2mag Azimuth= 62.4° ENE altitude= 47.6° in constellation Lacerta RA=22h11.0m Dec=+48°19' Flare angle=1.41° Flare center line, closest point →MapIt: Longitude=5.141°E Latitude=+45.631° (WGS84) Distance=32.8 km Azimuth=269.5° W Peak Magnitude=-7.2mag Satellite above: longitude=12.8°E latitude=+48.0° height above Earth=783.9 km distance to satellite=1016.5 km Altitude of Sun=-15.0°

	OrbitalEx Cn Rocket (30778 2007-006-G) →Ground track →Star chart	**Appears** **22h43m44s** 6.1mag az:240.9° WSW horizon **Disappears** **22h47m32s** 4.1mag az:198.9° SSW h:13.8° Time uncertainty of about 5 seconds	
🌀 22h47m32s			

22 Items/Events: 🌀 Export to Outlook/iCal🔲 🖨 Print ✉ E-mail
Used satellite data set is from 2 August 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.

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.

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: 25 August 2014
Database updated 6 min ago
Current Users: 188, Runtime: 4.2s

26 Aug 2014, 12:38 UTC
598 minutes left for this session ℹ
36 days left in ad-free mode