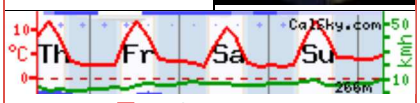
Select start of calculation:
Date: 22 August 2013
Time: 22 : 20 : 00 . 00 in TDT Now
Select duration: 10 Minutes go!

geipan
brue, France
Easting: 5.9446
Northing: 43.5274
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 Streams
- ☑ 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
- ☑ Sun and Moon
- ☑ Planets
- ☐ Asteroids
- ☐ Comets
- ☐ Meteor Streams
- ☐ 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
- ☐ Milky Way
- ☐ Galaxies
- ☐ Open Star Clusters
- ☐ Globular Star Clusters
- ☐ Nebula

go!

Thursday 22 August 2013

Time (24-hour clock)	Object (Link)	Event
	Observer Site	brue, France WGS84: Lon: +5d56m40.87s Lat: +43d31m38.92s Alt: 316m All times in CET or CEST (during summer)
22h20m00s	USA 238-B/NOSS-3 6(B) (38773 2012-048-P) →Ground track →Star chart	**Appears** horizon **22h02m13s** 7.6mag az:219.1° SW **Culmination** **22h12m21s** **4.7mag** az:307.7° **NW** **h:78.1°** distance: 1175.4km height above Earth: 1154.3km elevation of Sun: -18° angular velocity: 0.37°/s **at Meridian** **22h13m06s** 4.8mag az: 0.0° N h:70.9° **Disappears** **22h22m13s** 7.5mag az: 36.8° NE horizon

22h20m00s	USA 238/NOSS-3 6(A) (38758 2012-048-A) →Ground track →Star chart	**Appears** **22h02m19s** 7.6mag az:218.9° SW horizon **Culmination** **22h12m27s** **4.7mag** az:307.6° **NW** **h:78.7°** distance: 1175.3km height above Earth: 1156.3km elevation of Sun: -18° angular velocity: 0.37°/s **at Meridian** **22h13m10s** 4.8mag az: 0.0° N h:71.8° **Disappears** **22h22m20s** 7.5mag az: 36.8° NE horizon
22h20m00s	SJ 11-03 Rocket (37731 2011-030-B) →Ground track →Star chart	**Appears** **22h16m18s** 4.3mag az: 64.7° ENE h:13.4° **Culmination** **22h16m30s** **4.3mag** az: 61.5° **ENE** **h:13.5°** distance: 1752.1km height above Earth: 616.9km elevation of Sun: -18° angular velocity: 0.25°/s **Disappears** **22h21m46s** 6.5mag az: 6.5° N horizon
22h20m00s	ARGOS (25634 1999-008-A) →Ground track →Star chart	**Appears** **22h15m08s** 4.6mag az:113.8° ESE h:29.6° **Culmination** **22h17m10s** **4.4mag** az: 67.9° **ENE** **h:41.4°** distance: 1188.8km height above Earth: 841.1km elevation of Sun: -18° angular velocity: 0.37°/s **at Meridian** **22h22m06s** 7.2mag az: 0.0° N h:10.8° **Disappears** **22h24m43s** 8.4mag az:353.1° N horizon
22.3h	♄Saturn	Magnitude= 0.7mag Best seen from 20.7h -23.1h (h_{top}=23° at SW at 20.7h) (in constellation Virgo) RA=14h18m52s Dec=-11°27.4' (J2000) Distance=10.208AU Elongation= 67° Diameter=16.2" planetocentric latitude of the Earth=17.9°
22.3h	♇Pluto	Magnitude=14.1mag Best seen from 21.9h - 0.3h (h_{top}=26° at S at 22.2h) (in constellation Sagittarius) RA=18h38m16s Dec=-20°02.2' (J2000) Distance=31.846AU Elongation=129° Diameter=0.1"
22h20m46s	Cosmos 1842 Rocket (17912 1987-038-B) →Ground track →Star chart	**Appears** **22h18m27s** 5.3mag az:172.9° S h:27.2° **Culmination** **22h20m46s** **4.1mag** az: 95.7° **E** **h:69.7°** distance: 667.7km height above Earth: 630.2km elevation of Sun: -19° angular velocity: 0.67°/s **Disappears** **22h27m24s** 8.4mag az: 11.2° N horizon
22h20m57s	Cosmos 292 Rocket (04071 1969-070-B) →Ground track →Star chart	**Appears** **22h13m48s** 7.6mag az:194.3° SSW horizon **at Meridian** **22h19m48s** 4.7mag az:180.0° S h:51.9° **Culmination** **22h20m57s** **4.3mag** az:108.1° **ESE** **h:76.7°** distance: 722.0km height above Earth: 705.0km elevation of Sun: -19° angular velocity: 0.62°/s **Disappears** **22h28m10s** 8.3mag az: 22.3° NNE horizon
22h25m21s	**IGS 5 H2A Rocket (36105 2009-066-B)** →Ground track →Star chart	**Appears** **22h24m08s** **3.0mag** **az:167.1° SSE** **h:43.1°** **at Meridian** **22h25m19s** **2.6mag** **az:180.0° S** **h:88.6°** **Culmination** **22h25m21s** **2.6mag** **az:256.9° WSW** **h:89.7°** **distance: 546.3km height above Earth: 546.6km elevation of Sun: -20° angular velocity: 0.82°/s** **Disappears** **22h31m21s** **7.8mag** **az:348.1° NNW** **horizon**
22h25m56s	ISS →Ground track →Star chart	**Appears** **22h20m44s** 2.6mag az:295.1° WNW horizon **Culmination** **22h25m56s** **-2.6mag** az:222.6° **SW** **h:28.3°** distance: 809.7km height above Earth: 420.8km elevation of Sun: -20° angular velocity: 0.54°/s **Disappears** **22h26m14s** -2.7mag az:212.2° SSW h:27.8°
22h26m13s	**HTV-4 (39221 2013-040-A)** →Ground track	**Appears** **22h21m01s** **7.6mag** **az:295.0° WNW** **horizon** **Culmination** **22h26m13s** **2.4mag** **az:222.7° SW** **h:28.1°**

	→Star chart	**distance: 814.0km height above Earth: 420.8km elevation of Sun: -20° angular velocity: 0.54°/s** **Disappears 22h26m30s 2.3mag az:212.6° SSW h:27.6°** **Time uncertainty of about 11 seconds**
22.5h	Uranus	Magnitude= 5.7mag Best seen from 22.5h - 5.7h (h_{top}=50° at S at 4.3h) (in constellation Pisces) RA= 0h44m37s Dec= +4°00.5' (J2000) Distance=19.282AU Elongation=138° Diameter=3.6"
22h29m15s	Cosmos 1346 Rocket (13121 1982-027-B) →Ground track →Star chart	**Appears 22h27m43s** 4.2mag az:186.2° S h:36.2° **at Meridian 22h28m48s** 3.4mag az:180.0° S h:68.6° **Culmination 22h29m15s 3.3mag** az: 99.3° **E h:86.5°** **distance: 547.1km height above Earth: 546.5km elevation of Sun: -20° angular velocity: 0.82°/s** **Disappears 22h35m23s** 7.8mag az: 11.1° N horizon

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

Used satellite data set is from 21 August 2013

Hide glossary

Glossary:

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 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.

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.

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.

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.

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.

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Database updated 18 min ago
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595 minutes left for this session / Mode for our sponsors

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