Select start of calculation:
Date: 5 March 2015
Time: 20 : 00 : 00 . 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!

Thursday 5 March 2015

Time (24-hour clock)	Object (Link)	Event
	Observer Site	bouvines, France WGS84: Lon: +3d11m15.03s Lat: +50d34m42.83s Alt: 84m All times in CET or CEST (during summer)

	20h00m00s	Geosats flare season	**Optimal day to observe flares from geostationary satellites!** Geostationary satellites are usually very dim objects, comparable with Pluto. Today, some can get so bright for some minutes, that they can be seen with the unaided eye. Look for them at the optimal coordinates and time given below and with patience. The satellites will move slowly through the stellar field, about one or one cluster every 5 minutes. And the Geostationary satellites get totally eclipsed tonight. They disappear completely in the shadow of Earth at about the same spot on the celestial sphere one after the other, about one satellite or cluster every 5 minutes. With a little patience this can be easily observed through a smaller telescope. • Umbral shadow eclipse: Satellites disappear at RA=11h01m Dec=-6.9° and reappear at RA=11h50m Dec=-6.7° Duration=47.8 minutes • Penumbral eclipse: Satellites start fading at RA=10h58m Dec=-6.9°, full brightness: RA=11h53m Dec=-6.7° Duration=53.8 minutes, duration of fading until total eclipse: 3.0 minutes • **Optimal coordinates** to look for geostationary satellites at this time: RA=10h58m Dec=-6.9°, az=107.4° h=5.2° (Penumbra eclipse begin) The Sun is at Dec=-6.0°, flare angle=1.8° • There is no optimal time to observe geostationary satellites. Observe them whenever you like during the night.
	20h00m00s	Fengyun 3A Rocket (32959 2008-026-B) →Ground track →Star chart	**Appears** **19h47m33s** 7.4mag az: 17.7° NNE horizon **Culmination** **19h55m10s** **4.2mag** az:101.7° **ESE** **h:58.0°** distance: 923.0km height above Earth: 799.5km elevation of Sun: -14° angular velocity: 0.45°/s **at Meridian** **19h59m51s** 6.5mag az:180.0° S h:12.3° **Disappears** **20h02m34s** 7.5mag az:185.3° S horizon 
	20h00m00s	USA 217/STPSat-2 (37222 2010-062-A) →Ground track →Star chart	**Appears** **19h47m06s** 9.3mag az:328.1° NNW horizon **Culmination** **19h53m54s** **6.2mag** az:249.4° **WSW** **h:48.7°** distance: 838.9km height above Earth: 652.3km elevation of Sun: -13° angular velocity: 0.50°/s **at Meridian** **19h57m15s** 6.9mag az:180.0° S h:16.7° **Disappears** **20h00m37s** 8.1mag az:170.3° S horizon 
	20h00m00s	Cosmos 2278 (23087 1994-023-A) →Ground track →Star chart	**Appears** **19h47m16s** 8.5mag az:331.3° NNW horizon **at Meridian** **19h53m39s** 5.4mag az: 0.0° N h:40.8° **Culmination** **19h55m23s** **4.5mag** az: 55.2° **NE** **h:57.4°** distance: 990.7km height above Earth: 854.2km elevation of Sun: -14° angular velocity: 0.42°/s **Disappears** **20h00m10s** 6.0mag az:132.0° SE h:14.4° 
	20h00m00s	IGS 5 H2A Rocket (36105 2009-066-B) →Ground track →Star chart	**Appears** **19h56m54s** 3.8mag az: 84.0° E h:22.5° **Culmination** **19h57m41s** **3.8mag** az: 64.5° **ENE** **h:24.1°** distance: 1127.2km height above Earth: 537.2km elevation of Sun: -14° angular velocity: 0.40°/s 

			at Meridian **20h02m29s** 6.3mag az: 0.0° N h:3.0° **Disappears** **20h03m15s** 6.6mag az:357.0° N horizon Time uncertainty of about 2 seconds
	20h03m05s	ALOS (28931 2006-002-A) →Ground track →Star chart	**Appears** **20h01m42s** 4.1mag az: 89.8° E h:22.5° **Culmination** **20h03m05s** **4.0mag** az: 62.1° **ENE** **h:26.1°** distance: 1345.6km height above Earth: 695.1km elevation of Sun: -15° angular velocity: 0.33°/s **at Meridian** **20h08m08s** 6.2mag az: 0.0° N h:5.1° **Disappears** **20h09m29s** 6.7mag az:354.8° N horizon
	20h06m12s	USA 121/NOSS 2-3D (23862 1996-029-D) →Ground track →Star chart	**Appears** **19h58m37s** 10.4mag az:254.1° WSW horizon **Culmination** **20h06m12s** **6.4mag** az:332.4° **NNW** **h:40.4°** distance: 1303.5km height above Earth: 912.2km elevation of Sun: -15° angular velocity: 0.34°/s **at Meridian** **20h07m25s** 6.2mag az: 0.0° N h:36.6° **Disappears** **20h14m26s** 7.8mag az: 47.2° NE h:3.2°
	20h08m26s	USA 120/NOSS 2-3C (23908 1996-029-C) →Ground track →Star chart	**Appears** **20h00m50s** 10.5mag az:255.5° WSW horizon **Culmination** **20h08m26s** **6.5mag** az:333.4° **NNW** **h:39.4°** distance: 1336.1km height above Earth: 921.3km elevation of Sun: -16° angular velocity: 0.33°/s **at Meridian** **20h09m39s** 6.3mag az: 0.0° N h:35.9° **Disappears** **20h16m37s** 7.8mag az: 47.3° NE h:3.5°
	20h09m13s	ERS-1 Rocket (21610 1991-050-F) →Ground track →Star chart	**Appears** **20h01m56s** 6.8mag az:171.8° S horizon **at Meridian** **20h05m55s** 5.3mag az:180.0° S h:21.5° **Culmination** **20h09m13s** **4.3mag** az:257.4° **WSW** **h:64.7°** distance: 837.1km height above Earth: 765.7km elevation of Sun: -16° angular velocity: 0.53°/s **Disappears** **20h16m36s** 7.7mag az:343.2° NNW horizon
	20h11m01s	Cosmos 1980 Rocket (19650 1988-102-B) →Ground track →Star chart	**Appears** **20h03m47s** 7.1mag az:331.6° NNW horizon **at Meridian** **20h08m12s** 5.3mag az: 0.0° N h:14.3° **Culmination** **20h11m01s** **4.4mag** az: 35.2° **NE** **h:19.8°** distance: 1876.8km height above Earth: 853.1km elevation of Sun: -16° angular velocity: 0.22°/s **Disappears** **20h12m59s** 4.4mag az: 61.2° ENE h:16.8°
	20h12m08s	USA 81/SBWASS R3/Singleton 3 (21949 1992-023-A) →Ground track →Star chart	**Appears** **20h04m33s** 8.3mag az:356.8° N horizon **at Meridian** **20h06m02s** 7.8mag az: 0.0° N h:5.7° **Culmination** **20h12m08s** **4.9mag** az: 77.8° **ENE** **h:48.4°** distance: 1019.5km height above Earth: 794.7km elevation of Sun: -16° angular velocity: 0.41°/s **Disappears** **20h16m29s** 6.5mag az:149.8° SSE h:14.1°
	20h14m26s	NOSS 3-1 Rocket (26906 2001-040-B) →Ground track	**Appears** **20h04m17s** 8.1mag az:315.4° NW horizon **Culmination** **20h14m26s** **3.7mag** az:228.5° **SW** **h:86.4°** distance: 1251.5km height above Earth: 1249.6km

		→Star chart	elevation of Sun: -17° angular velocity: 0.32°/s **at Meridian** **20h14m39s** 3.7mag az:180.0° S h:84.6° **Disappears** **20h21m26s** 5.2mag az:141.3° SE h:14.8°
	20h16m38s	USA 186/KH (28888 2005-042-A) →Ground track →Star chart	**Appears** **20h16m38s** 4.7mag az:355.7° N h:36.8° **Disappears** **20h19m56s** 8.4mag az:348.9° N horizon Time uncertainty of about 4 minutes
	20h18m59s	Cosmos 1743 (16719 1986-034-A) →Ground track →Star chart	**Appears** **20h12m57s** 7.0mag az:186.5° S horizon **at Meridian** **20h18m05s** 3.8mag az:180.0° S h:52.2° **Culmination** **20h18m59s** **3.3mag** az: 98.7° **E** **h:83.6°** distance: 543.5km height above Earth: 540.4km elevation of Sun: -17° angular velocity: 0.83°/s **Disappears** **20h25m06s** 7.2mag az: 11.2° N horizon
	20h24m00s	Cosmos 2441 (33272 2008-037-A) →Ground track →Star chart	**Appears** **20h16m56s** 6.6mag az:170.4° S horizon **at Meridian** **20h21m38s** 4.7mag az:180.0° S h:29.9° **Culmination** **20h24m00s** **3.9mag** az:257.4° **WSW** **h:70.7°** distance: 759.6km height above Earth: 721.2km elevation of Sun: -18° angular velocity: 0.58°/s **Disappears** **20h31m06s** 7.7mag az:344.8° NNW horizon
	20h27m14s	Cosmos 1500 (14372 1983-099-A) →Ground track →Star chart	**Appears** **20h21m16s** 7.6mag az:194.4° SSW horizon **Culmination** **20h27m14s** **4.3mag** az:281.5° **WNW** **h:69.4°** distance: 556.6km height above Earth: 523.9km elevation of Sun: -19° angular velocity: 0.81°/s **at Meridian** **20h29m16s** 5.7mag az: 0.0° N h:26.0° **Disappears** **20h33m12s** 7.7mag az: 8.8° N horizon

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

Used satellite data set is from 4 March 2015

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.

Duration
Duration of the umbral phase at the geographical point given (WGS84).

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.

Top

Software Version: 20 March 2015
Database updated 29 min ago
Current Users: 410, Runtime: 2.2s

23 Mar 2015, 18:31 UTC
598 minutes left for this session / Mode
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