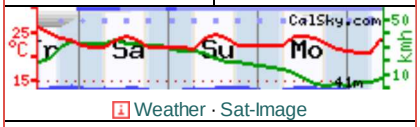
Select start of calculation:
Date: 5 May 2014
Time: 18 : 30 : 42 . 00 in TDT Now
Select duration: 30 Minutes go!

geipan
saint denis la reunion , Reunion
Easting: 55.4506
Northing: -20.882
Time zone: RET
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!

Monday 5 May 2014

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

	Observer Site	saint denis la reunion , Reunion WGS84: Lon: +55d27m02.43s Lat: -20d52m55.41s Alt: 43m All times in RET
18h31m21s	Cosmos 2278 Rocket (23088 1994-023-B) →Ground track →Star chart	**Appears** **18h23m22s** 6.1mag az:188.4° S horizon **at Meridian** **18h26m23s** 5.1mag az:180.0° S h:12.3° **Culmination** **18h31m21s** **3.2mag** az:109.7° **ESE** **h:44.5°** distance: 1147.0km height above Earth: 849.9km elevation of Sun: -9° angular velocity: 0.38°/s **Disappears** **18h39m14s** 5.9mag az: 31.5° NNE horizon
18h32m42s	Iridium 15	Flare from MMA2 (Left antenna) **Magnitude= 4.0mag** Azimuth=359.2° N altitude= 37.8° in constellation Cancer RA= 9h05.1m Dec=+31°17' Flare angle=2.61° **Flare center line, closest point** →MapIt: Longitude=55.971°E Latitude=-20.902° (WGS84) **Distance=54.0 km** Azimuth= 92.4° E Peak Magnitude=-6.9mag Satellite above: longitude=55.3°E latitude=-13.3° height above Earth=784.0 km distance to satellite=1179.1 km Altitude of Sun=-9.8°
18h33m32s	Sinosat 2 Rocket (29517 2006-048-B) →Ground track →Star chart	**Appears** **18h28m36s** 8.3mag az:295.4° WNW horizon **at Meridian** **18h33m26s** -0.4mag az: 0.0° N h:58.2° **Culmination** **18h33m32s** **-0.7mag** az: 21.0° **NNE** **h:59.9°** distance: 266.0km height above Earth: 231.5km elevation of Sun: -10° angular velocity: 2.16°/s **Disappears** **18h34m30s** 0.5mag az: 98.2° E h:19.6° Time uncertainty of about 35 seconds
18h33m51s	Cosmos 1536 Rocket (14700 1984-013-B) →Ground track →Star chart	**Appears** **18h27m03s** 7.7mag az:184.9° S horizon **at Meridian** **18h33m22s** 4.4mag az:180.0° S h:71.1° **Culmination** **18h33m51s** **4.3mag** az: 94.5° **E** **h:88.5°** distance: 640.8km height above Earth: 640.7km elevation of Sun: -10° angular velocity: 0.68°/s **Disappears** **18h40m30s** 8.0mag az: 4.3° N horizon
18h34m54s	**Aurora 2 Dl Rocket (21393 1991-037-B)** →Ground track →Star chart	**Appears** **18h28m52s** **11.0mag** **az:278.3° W** horizon **Culmination** **18h34m54s** **2.7mag** **az:192.5° SSW** **h:64.1°** **distance: 463.0km height above Earth: 419.4km elevation of Sun: -10° angular velocity: 1.04°/s** **at Meridian** **18h34m59s** **2.6mag** **az:180.0° S** **h:63.5°** **Disappears** **18h37m16s** **4.0mag** **az:112.2° ESE** **h:16.1°** **Time uncertainty of about 1 seconds**
18h38m26s	Cosmos 1782 (16986 1986-074-A) →Ground track →Star chart	**Appears** **18h32m17s** 6.9mag az:175.9° S horizon **Culmination** **18h38m26s** **3.8mag** az: 96.4° **E** **h:43.2°** distance: 790.5km height above Earth: 565.0km elevation of Sun: -11° angular velocity: 0.55°/s **Disappears** **18h44m32s** 7.1mag az: 17.2° NNE horizon

18h41m27s	GPS 2-17 Rocket Part 1 (22276 1992-089-B) →Ground track →Star chart	**Appears** **18h34m06s** 10.5mag az:267.8° W horizon **Culmination** **18h41m27s** **4.0mag** az:355.0° **N** **h:79.4°** distance: 677.3km height above Earth: 666.8km elevation of Sun: -12° angular velocity: 0.67°/s **at Meridian** **18h41m29s** 4.0mag az: 0.0° N h:79.3° **Disappears** **18h45m25s** 5.5mag az: 80.5° E h:15.6°
18h41m44s	Cosmos 1263 Rocket (12389 1981-033-B) →Ground track →Star chart	**Appears** **18h36m49s** 5.9mag az:169.9° S horizon **Culmination** **18h41m44s** **3.4mag** az: 95.0° **E** **h:29.0°** distance: 821.4km height above Earth: 436.0km elevation of Sun: -12° angular velocity: 0.54°/s **Disappears** **18h47m08s** 6.4mag az: 21.7° NNE horizon Time uncertainty of about 3 seconds
18h49m13s	Cosmos 1892 (18421 1987-088-A) →Ground track →Star chart	**Appears** **18h43m12s** 7.5mag az:356.7° N horizon **at Meridian** **18h48m09s** 4.2mag az: 0.0° N h:46.9° **Culmination** **18h49m13s** **3.4mag** az: 85.6° **E** **h:86.1°** distance: 536.3km height above Earth: 535.2km elevation of Sun: -14° angular velocity: 0.82°/s **Disappears** **18h55m18s** 6.9mag az:174.2° S horizon
18h50m03s	**Intlsat F6 Rocket (20669 1990-056-C)** →Ground track →Star chart	**Appears** **18h46m23s** **8.3mag** **az:257.5° WSW** **horizon** **Culmination** **18h50m03s** **1.9mag** **az:166.7° SSE** **h:89.3°** **distance: 349.4km height above Earth: 349.4km elevation of Sun: -14° angular velocity: 1.72°/s** **Disappears** **18h51m40s** **3.7mag** **az: 77.4° ENE** **h:22.7°** **at Meridian** **14h16m41s** **6.8mag** **az: 0.0° N** **h:85.0°** **Time uncertainty of about 1 seconds**
18h50m06s	ETS-7 (25064 1997-074-B) →Ground track →Star chart	**Appears** **18h44m40s** 7.9mag az:231.3° SW horizon **at Meridian** **18h49m26s** 4.2mag az:180.0° S h:30.3° **Culmination** **18h50m06s** **3.8mag** az:154.7° **SSE** **h:33.2°** distance: 731.4km height above Earth: 428.0km elevation of Sun: -14° angular velocity: 0.63°/s **Disappears** **18h51m17s** 4.0mag az:114.6° ESE h:25.6° Time uncertainty of about 4 seconds
18h51m00s	USA 76/NOSS 2-2B (21808 1991-076-D) →Ground track →Star chart	**Appears** **18h42m47s** 8.5mag az:204.0° SSW horizon **at Meridian** **18h50m02s** 4.9mag az:180.0° S h:56.1° **Culmination** **18h51m00s** **4.4mag** az:116.8° **ESE** **h:73.4°** distance: 747.2km height above Earth: 719.2km elevation of Sun: -14° angular velocity: 0.61°/s **Disappears** **18h57m39s** 7.5mag az: 29.6° NNE horizon
18h56m09s	USA 74/NOSS 2-2A (21799 1991-076-C) →Ground track →Star chart	**Appears** **18h47m54s** 8.5mag az:205.7° SSW horizon **at Meridian** **18h55m53s** 4.6mag az:180.0° S h:79.5° **Culmination** **18h56m09s** **4.5mag** az:115.8° **ESE** **h:85.4°** distance: 724.6km height above Earth: 722.5km elevation

		of Sun: -15° angular velocity: 0.63°/s
		Disappears 19h02m51s 7.6mag az: 26.3° NNE horizon

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

Used satellite data set is from 3 May 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