You have not yet specified your observing site. You can do so →here, or using the menu entry "Intro", or by clicking the small Earth icon on the right side.

Select start of calculation:

Date: 29 April 2010

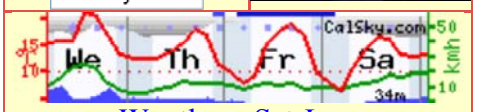
Time: 21 : 28 : 53 Now

Select duration: 9 Hours go!

Paris, France

Easting: 2.3333
Northing: 48.8667
Timezone: CET/ CEST

Hobby



Weather · Sat-Image

Local Sponsors: K. Pukallus

The Calendar-Sky

The astronomical calendar contains **thousands of events per day** for every point on earth. We know that you do care only 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 paranthesis 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 only 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

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, Shuttle (1 month) shortduration
- Flares of Iridium satellites (2 days)
- passes of other bright satellites (*7 days*, slow!)

Daily reoccuring events

- Sun and Moon
- Planets
- Asteroids
- Comets
- Meteor Streams
- Polar Star Transits
- Weather Balloons

Dimmer and more difficult objects

- Jupiter's Satellite: Events
- Jupiter's Satellite: Position
- Saturn's Satellites: Events
- Saturns's Satellite: Position
- Zodiacal light
- Variable Stars (3 months)
- Supernovae
- Binary Stars

Deep sky objects

- Milkyway
- Galaxies
- Open Star Clusters
- Globular Star Clusters

- Julian Day Number
- Sidereal Time
- Local Magnetic Field
- Nebula

go!

Thursday 29 April 2010

Time	Object (Link)	Event
	Observer Site	**Paris, France** **WGS84: Lon: +2d19m59.9s Lat: +48d52m00.1s Alt: 79m** **All times in CET or CEST (during summer)**
21h45m37s	Cosmos 2406 Rocket (28353 2004-021-B) →Ground track →Star chart	**Appears** **21h37m37s** 5.9mag az:191.3° SSW horizon **Culmination** **21h45m37s** **3.0mag** az:111.2° **ESE** **h:55.2°** distance: 1015.5km height above Earth: 856.7km elevation of sun: -7° **Disappears** **21h53m40s** 6.2mag az: 31.6° NNE horizon
21h46m27s	Yaogan 1 LM Rocket (29093 2006-015-B) →Ground track →Star chart	**Appears** **21h42m56s** 4.5mag az:133.8° SE h:7.6° **Culmination** **21h46m27s** **3.2mag** az: 68.7° **ENE** **h:29.6°** distance: 861.3km height above Earth: 466.5km elevation of sun: -7° **Disappears** **21h51m38s** 7.0mag az:356.0° N horizon
21h46m51s	Cosmos 2333 Rocket (24298 1996-051-B) →Ground track →Star chart	**Appears** **21h39m09s** 5.7mag az:178.4° S horizon **Culmination** **21h46m51s** **3.5mag** az:106.4° **ESE** **h:34.8°** distance: 1345.7km height above Earth: 853.2km elevation of sun: -7° **Disappears** **21h54m33s** 6.1mag az: 34.8° NE horizon
21h50m30s	Cosmos 1143 Rocket (11601 1979-093-B) →Ground track →Star chart	**Appears** **21h48m24s** 5.0mag az:163.8° SSE h:6.8° **Culmination** **21h50m30s** **3.1mag** az: 96.7° **E** **h:25.5°** distance: 454.9km height above Earth: 208.7km elevation of sun: -8° **Disappears** **21h54m00s** 6.8mag az: 21.6° NNE horizon Time uncertainty of about 2 minutes
21h57m01s	UARS (21701 1991-063-B) →Ground track →Star chart	**Appears** **21h52m28s** 10.0mag az:305.2° NW horizon **Culmination** **21h57m01s** **3.4mag** az: 15.7° **NNE** **h:21.0°** distance: 849.2km height above Earth: 350.6km elevation of sun: -9° **Disappears** **22h00m19s** 4.0mag az: 78.0° ENE h:5.4°
22h05m22s	ADEOS 2 (27597 2002-056-A) →Ground track →Star chart	**Appears** **22h00m03s** 4.7mag az:145.1° SE h:9.0° **Culmination** **22h05m22s** **3.1mag** az: 69.0° **ENE** **h:53.4°** distance: 980.6km height above Earth: 811.3km elevation of sun: -10° **Disappears** **22h12m53s** 7.5mag az:349.7° N horizon
22h14m18s	USA 182/Lacrosse 5 (28646 2005-016-A) →Ground track →Star chart	**Appears** **22h07m54s** 5.4mag az:184.3° S horizon **Culmination** **22h14m18s** **3.8mag** az:123.4° **ESE** **h:18.7°** distance: 1675.8km height above Earth: 715.5km elevation of sun: -11° **Disappears** **22h20m44s** 5.5mag az: 62.8° ENE horizon

22h22m38s	USA 186/KH (28888 2005-042-A) →Ground track →Star chart	**Appears** 22h17m07s 6.8mag az:141.1° SE h:13.2° **Culmination** 22h22m38s 5.5mag az: 69.0° **ENE** h:52.4° distance: 1202.6km height above Earth: 989.1km elevation of sun: -12° **Disappears** 22h30m49s 9.7mag az:350.8° N horizon
22h22m49s	**Cosmos 2219 Rocket (22220 1992-076-B)** →Ground track →Star chart	**Appears** 22h14m44s 6.0mag az:206.8° **SSW** horizon **Culmination** 22h22m49s 3.0mag az:297.6° **WNW** h:87.6° distance: 853.5km height above Earth: 852.9km elevation of sun: -12° **Disappears** 22h31m00s 6.4mag az: 28.8° **NNE** horizon
22h31m06s	**Iridium 56**	**Flare from MMA1 (Right antenna)** **Magnitude=-7.2mag** **Azimuth= 66.0° ENE altitude= 51.0° in constellation Bootes** **Flare angle=0.05°** **Flare center line, closest point →MapIt:** **Longitude=2.320° E Latitude=+48.867° (WGS84)** **Distance=1.0 km Azimuth=268.8° W** **Satellite above: longitude=9.4° E latitude=+50.7°** **height above Earth=784.8 km distance to satellite=976.2 km** **Altitude of sun=-13.0°**
22h38m41s	USA 129/KH 12-3 (24680 1996-072-A) →Ground track →Star chart	**Appears** 22h34m25s 6.5mag az:183.1° S h:7.9° **Culmination** 22h38m41s 5.0mag az:258.4° **WSW** h:44.7° distance: 684.5km height above Earth: 498.6km elevation of sun: -14° **Disappears** 22h43m46s 9.5mag az:340.3° NNW horizon
22h40m45s	SJ-11-01 LM Rocket (36089 2009-061-B) →Ground track →Star chart	**Appears** 22h35m21s 4.9mag az:180.4° S h:7.0° **Culmination** 22h40m45s 3.4mag az:259.5° **W** h:53.1° distance: 875.2km height above Earth: 719.0km elevation of sun: -14° **Disappears** 22h47m41s 8.0mag az:342.3° NNW horizon
22h43m45s	**Soyuz TMA-17 (36129 2009-074-A)** →Ground track →Star chart	**Appears** 22h38m52s 6.3mag az:229.8° **SW** horizon **Culmination** 22h43m45s 2.4mag az:150.1° **SSE** h:42.7° distance: 515.2km height above Earth: 360.2km elevation of sun: -15° **Disappears** 22h44m39s 2.9mag az:103.9° **ESE** h:31.7°
22h43m46s	**ISS** →Ground track →Star chart	**Appears** 22h38m53s -0.2mag az:229.8° **SW** horizon **Culmination** 22h43m46s -4.1mag az:150.1° **SSE** h:42.7° distance: 515.3km height above Earth: 360.2km elevation of sun: -15° **Disappears** 22h44m39s -3.6mag az:104.0° **ESE** h:31.7°
22h54m36s	**Cosmos 975 Rocket (10582 1978-004-B)** →Ground track →Star chart	**Appears** 22h52m46s 4.3mag az:194.1° **SSW** h:21.6° **Culmination** 22h54m36s 2.7mag az:281.5° **WNW** h:83.7° distance: 385.7km height above Earth: 383.5km elevation of sun: -16° **Disappears** 22h59m38s 7.7mag az: 11.5° **NNE** horizon
22h56m52s	Lacrosse 4 Rocket (26474	**Appears** 22h50m12s 5.7mag az:222.2° SW horizon **Culmination** 22h56m52s 3.1mag az:307.0° **NW** h:60.3°

	2000-047-B) →Ground track →Star chart	distance: 722.4km height above Earth: 636.4km elevation of sun: -16° **Disappears 23h03m47s 6.2mag az: 31.9° NNE horizon**
22h57m15s	IGS 5 H2A Rocket (36105 2009-066-B) →Ground track →Star chart	**Appears 22h55m30s 3.7mag az:123.4° ESE h:28.0°** **Culmination 22h57m15s 3.4mag az: 70.0° ENE h:44.1°** distance: 830.3km height above Earth: 603.4km elevation of sun: -16° **Disappears 23h03m31s 8.2mag az:352.6° N horizon**
23h07m07s	**IGS 1B (27699 2003-009-B)** →Ground track →Star chart	**Appears 23h05m59s 2.5mag az:152.4° SSE h:40.5°** **Culmination 23h07m07s 2.1mag az: 75.4° ENE h:76.0°** **distance: 493.3km height above Earth: 479.7km** **elevation of sun: -17°** **Disappears 23h12m44s 8.0mag az:349.1° N horizon**
23h23m36s	IGS 1A (27698 2003-009-A) →Ground track →Star chart	**Appears 23h23m08s 3.1mag az: 98.5° E h:44.2°** **Culmination 23h23m36s 3.2mag az: 72.0° ENE h:47.6°** distance: 650.6km height above Earth: 494.5km elevation of sun: -19° **Disappears 23h29m13s 8.5mag az:352.4° N horizon**
23h25m03s	**Terra (25994 1999-068-A)** →Ground track →Star chart	**Appears 23h23m19s 2.9mag az:137.3° SE h:37.4°** **Culmination 23h25m03s 2.6mag az: 71.6° ENE h:63.4°** **distance: 784.2km height above Earth: 709.7km** **elevation of sun: -19°** **Disappears 23h32m02s 8.1mag az:349.0° N horizon**
23h28m02s	NOSS 3-1 Rocket (26906 2001-040-B) →Ground track →Star chart	**Appears 23h22m47s 4.9mag az:190.5° S h:15.3°** **Culmination 23h28m02s 3.4mag az:120.6° ESE h:50.2°** distance: 1308.9km height above Earth: 1052.6km elevation of sun: -19° **Disappears 23h37m26s 6.7mag az: 43.7° NE horizon**
23h32m36s	**UARS (21701 1991-063-B)** →Ground track →Star chart	**Appears 23h28m04s 7.5mag az:304.9° NW horizon** **Disappears 23h32m36s 1.5mag az:311.8° NW h:66.9°**
23h45m55s	**Iridium 41**	**Flare from MMA1 (Right antenna) Magnitude=-0.6mag** **Azimuth= 30.2° NNE altitude= 14.0° in constellation Cygnus** **Flare angle=1.13°** **Flare center line, closest point →MapIt:** **Longitude=3.277° E Latitude=+48.780° (WGS84)** **Distance=69.7 km Azimuth= 97.6° E** **Satellite above: longitude=20.0° E latitude=+61.0°** **height above Earth=786.8 km distance to satellite=2012.5 km** **Altitude of sun=-21.0°**
23h49m59s	NOSS 3-2 Rocket (28096 2003-054-B) →Ground track →Star chart	**Appears 23h43m01s 5.4mag az:207.8° SSW h:8.3°** **Culmination 23h49m59s 3.2mag az:125.5° SE h:70.4°** distance: 1116.0km height above Earth: 1060.9km elevation of sun: -21° **Disappears 23h59m40s 6.9mag az: 42.4° NE horizon**
23h55m03s	Spot 5 Rocket (27422	**Appears 23h53m18s 3.5mag az:179.1° S h:42.9°** **Culmination 23h55m03s 3.3mag az:256.3° WSW h:76.9°**

	2002-021-B) →Ground track →Star chart	distance: 815.2km height above Earth: 796.3km elevation of sun: -22° Disappears 0h02m38s 9.1mag az:345.0° NNW horizon
23h55m33s	Iridium 43	Flare from MMA1 (Right antenna) Magnitude= 0.7mag Azimuth= 32.6° NNE altitude= 17.5° in constellation Cygnus Flare angle=1.60° Flare center line, closest point →MapIt: Longitude=1.081° E Latitude=+48.990° (WGS84) Distance=92.4 km Azimuth=279.0° W Satellite above: longitude=17.7° E latitude=+61.3° height above Earth=786.8 km distance to satellite=1951.0 km Altitude of sun=-21.8°
23h56m31s	USA 182/Lacrosse 5 (28646 2005-016-A) →Ground track →Star chart	Appears 23h49m08s 5.7mag az:229.3° SW horizon Culmination 23h56m31s 2.3mag az:142.3° SE h:81.7° distance: 724.1km height above Earth: 717.3km elevation of sun: -22° Disappears 0h03m58s 6.0mag az: 55.6° NE horizon
23h56m45s	USA 182/Lacrosse 5	Flare from SAR antenna Magnitude= 0.9mag Azimuth=100.3° E altitude= 78.8° in constellation Canes Venatici Flare angle=12.35° Flare center line, closest point →MapIt: Longitude=3.592° E Latitude=+47.736° (WGS84) Distance=156.4 km Azimuth=143.0° SE Satellite above: longitude=4.0° E latitude=+48.6° height above Earth=717.5 km distance to satellite=729.4 km Altitude of sun=-21.9° This is an experimental flare prediction. Brightness estimate may be unreliable. Please report a successful observation (Object/site coordinates/date/measured time/accuracy/magnitude).

Friday 30 April 2010

Time	Object (Link)	Event
0h03m54s	ADEOS 2 H2A Rocket (27601 2002-056-E) →Ground track →Star chart	**Appears** 0h02m54s 3.1mag az:100.4° E h:39.6° **Culmination** 0h03m54s **3.2mag** az: 67.7° **ENE** **h:45.1°** distance: 1004.4km height above Earth: 746.9km elevation of sun: -22° **Disappears** 0h10m56s 8.3mag az:350.7° N horizon
0h07m53s	**Lacrosse 5 Rocket (28647 2005-016-B)** →Ground track →Star chart	**Appears** 0h01m11s **7.6mag** **az:304.3° NW** **horizon** **Culmination** 0h07m53s **2.2mag** **az:217.9° SW** **h:78.7°** **distance: 654.6km height above Earth: 643.1km** **elevation of sun: -23°** **Disappears** 0h08m21s **2.1mag** **az:160.7° SSE** **h:69.6°**
0h16m16s	**ISS** →Ground track →Star chart	**Appears** 0h14m02s **0.1mag** **az:264.4° W** **horizon** **Disappears** 0h16m16s **-1.1mag** **az:270.1° W** **h:11.5°**
0h18m25s	Cosmos 2455 (36095 2009-063-A) →Ground track →Star chart	**Appears** 0h17m49s 3.1mag az:136.1° SE h:49.2° **Culmination** 0h18m25s **3.2mag** az:116.1° **ESE** **h:51.1°** distance: 1132.1km height above Earth: 915.5km elevation of sun: -23° **Disappears** 0h26m49s 6.9mag az: 38.1° NE horizon
0h25m24s	Cosmos 1953 (19210 1988-050-A) →Ground track →Star chart	**Appears** 0h19m07s 9.2mag az:347.2° NNW horizon **Culmination** 0h25m24s **3.3mag** az:263.7° **W** **h:64.5°** distance: 631.1km height above Earth: 575.0km elevation of sun: -24° **Disappears** 0h25m25s 3.2mag az:261.2° W h:64.5°
0h27m11s	Helios 1B Rocket (25979 1999-064-C) →Ground track →Star chart	**Appears** 0h27m04s 3.1mag az:217.2° SW h:82.6° **Culmination** 0h27m11s **3.1mag** az:255.8° **WSW** **h:84.2°** distance: 629.7km height above Earth: 626.8km elevation of sun: -24° **Disappears** 0h33m43s 9.3mag az:346.0° NNW horizon
1h28m31s	NOSS 3-1 (C) (26907 2001-040-C) →Ground track →Star chart	**Appears** 1h28m27s 4.7mag az:120.2° ESE h:42.9° **Culmination** 1h28m31s **4.7mag** az:118.5° **ESE** **h:43.0°** distance: 1428.0km height above Earth: 1046.8km elevation of sun: -26° **Disappears** 1h37m45s 8.5mag az: 44.3° NE horizon
1h28m38s	NOSS 3-1 (A) (26905 2001-040-A) →Ground track →Star chart	**Appears** 1h28m34s 4.7mag az:119.7° ESE h:42.5° **Culmination** 1h28m38s **4.7mag** az:118.3° **ESE** **h:42.5°** distance: 1436.7km height above Earth: 1046.7km elevation of sun: -26° **Disappears** 1h37m51s 8.5mag az: 44.4° NE horizon
1h39m48s	USA 182/Lacrosse 5 (28646 2005-016-A) →Ground track →Star chart	**Appears** 1h32m33s 5.9mag az:266.2° W horizon **Culmination** 1h39m48s **4.1mag** az:343.9° **NNW** **h:39.3°** distance: 1061.6km height above Earth: 719.4km elevation of sun: -26° **Disappears** 1h47m04s 6.5mag az: 61.6° ENE horizon
3h01m53s	USA 81/SBWASS R3/Singleton 3	**Appears** 3h01m07s 4.6mag az:203.8° SSW h:65.4° **Culmination** 3h01m53s **4.6mag** az:276.0° **W** **h:82.1°**

	(21949 1992-023-A) →Ground track →Star chart	distance: 804.4km height above Earth: 797.6km elevation of sun: -24° **Disappears 3h09m36s** 10.4mag az: 5.9° N horizon
3h14m37s	Seasat (10967 1978-064-A) →Ground track →Star chart	**Appears 3h12m13s** 4.2mag az:133.3° SE h:30.5° **Culmination 3h14m37s 3.4mag** az: 57.0° **ENE h:70.8°** distance: 800.0km height above Earth: 760.3km elevation of sun: -24° **Disappears 3h21m52s** 7.4mag az:332.8° NNW horizon
3h19m22s	NOSS 3-1 (C) (26907 2001-040-C) →Ground track →Star chart	**Appears 3h15m52s** 5.3mag az:255.7° WSW h:27.9° **Culmination 3h19m22s 4.9mag** az:321.2° **NW h:54.9°** distance: 1260.9km height above Earth: 1066.5km elevation of sun: -23° **Disappears 3h29m04s** 9.8mag az: 43.8° NE horizon
3h19m28s	NOSS 3-1 (A) (26905 2001-040-A) →Ground track →Star chart	**Appears 3h15m59s** 5.3mag az:255.4° WSW h:28.2° **Culmination 3h19m28s 4.9mag** az:321.0° **NW h:55.3°** distance: 1255.4km height above Earth: 1065.9km elevation of sun: -23° **Disappears 3h29m09s** 9.8mag az: 43.7° NE horizon
3h20m04s	GOSAT Rocket (33500 2009-002-J) →Ground track →Star chart	**Appears 3h20m04s** 3.2mag az:278.3° W h:35.7° **Disappears 3h26m13s** 7.0mag az:339.8° NNW horizon
3h23m39s	USA 182/Lacrosse 5 (28646 2005-016-A) →Ground track →Star chart	**Appears 3h16m29s** 5.8mag az:292.1° WNW horizon **Culmination 3h23m39s 4.5mag** az: 7.0° **N h:33.5°** distance: 1181.6km height above Earth: 720.5km elevation of sun: -23° **Disappears 3h30m49s** 6.7mag az: 81.8° E horizon
3h29m05s	**Cosmos 2082 Rocket (20625 1990-046-B)** →Ground track →Star chart	**Appears 3h27m30s 3.0mag az:230.3° SW h:47.6°** **Culmination 3h29m05s 2.9mag az:300.0° WNW h:72.8°** **distance: 880.8km height above Earth: 846.4km elevation of sun: -23°** **Disappears 3h37m12s 9.0mag az: 27.9° NNE horizon**
3h34m18s	Cosmos 1980 Rocket (19650 1988-102-B) →Ground track →Star chart	**Appears 3h26m11s** 7.0mag az:332.4° NNW horizon **Culmination 3h34m18s 3.2mag** az: 58.9° **ENE h:67.3°** distance: 905.4km height above Earth: 843.8km elevation of sun: -22° **Disappears 3h39m55s** 5.1mag az:142.1° SE h:9.9°
3h39m05s	USA 125 Rocket Part 2 (23947 1996-038-C) →Ground track →Star chart	**Appears 3h39m05s** 4.9mag az:342.3° NNW h:44.6° **Disappears 3h46m06s** 10.5mag az: 63.4° ENE horizon Time uncertainty of about 2 seconds
3h48m49s	Cosmos 1697	**Appears 3h40m45s** 7.3mag az:330.2° NNW horizon **Culmination 3h48m49s 3.2mag** az:244.9° **WSW**

	Rocket (16182 1985-097-B) →Ground track →Star chart	h:77.0° distance: 862.4km height above Earth: 843.0km elevation of sun: -21° Disappears 3h52m11s 4.5mag az:162.8° SSE h:25.1°
4h02m02s	**Cosmos 2322 Rocket (23705 1995-058-B)** →Ground track →Star chart	Appears 3h53m49s 6.8mag az:331.0° NNW horizon Culmination 4h02m02s 2.8mag az:243.0° WSW h:88.8° distance: 860.0km height above Earth: 860.0km elevation of sun: -20° Disappears 4h08m31s 5.3mag az:154.5° SSE h:6.5° 
4h15m59s	**Iridium 49**	Flare from MMA0 (Front antenna) Magnitude=-3.3mag Azimuth=114.3° ESE altitude= 26.6° in constellation Delphinus Flare angle=0.61° Flare center line, closest point →MapIt: Longitude=2.769° E Latitude=+48.855° (WGS84) Distance=31.9 km Azimuth= 92.1° E Satellite above: longitude=15.7° E latitude=+43.8° height above Earth=783.0 km distance to satellite=1469.5 km Altitude of sun=-18.5° 
4h22m35s	**Iridium 11**	Flare from MMA0 (Front antenna) Magnitude=-5.2mag Azimuth=114.7° ESE altitude= 28.3° in constellation Delphinus Flare angle=0.33° Flare center line, closest point →MapIt: Longitude=2.536° E Latitude=+48.864° (WGS84) Distance=14.8 km Azimuth= 91.3° E Satellite above: longitude=14.3° E latitude=+44.3° height above Earth=715.0 km distance to satellite=1308.6 km Altitude of sun=-17.8° This is a spare satellite or its status is unknown. Brightness estimate may be unreliable and flare time accurate to a few seconds. 
4h32m25s	NOSS 3-2 (A) (28095 2003-054-A) →Ground track →Star chart	Appears 4h22m38s 7.6mag az:317.3° NW horizon Culmination 4h32m25s 4.4mag az:231.6° SW h:81.0° distance: 1153.0km height above Earth: 1141.0km elevation of sun: -17° Disappears 4h42m25s 7.3mag az:145.5° SE horizon 
4h32m30s	NOSS 3-2 (C) (28097 2003-054-C) →Ground track →Star chart	Appears 4h22m43s 7.6mag az:317.3° NW horizon Culmination 4h32m30s 4.4mag az:231.5° SW h:81.6° distance: 1152.2km height above Earth: 1141.7km elevation of sun: -17° Disappears 4h42m31s 7.3mag az:145.2° SE horizon 
5h07m15s	USA 182/Lacrosse 5 (28646 2005-016-A) →Ground track →Star chart	Appears 4h59m49s 5.6mag az:303.6° WNW horizon Culmination 5h07m15s 3.1mag az: 29.4° NNE h:64.0° distance: 791.8km height above Earth: 720.1km elevation of sun: -13° Disappears 5h14m39s 6.5mag az:115.0° ESE horizon 
5h08m03s	**USA 182/Lacrosse 5**	Flare from SAR antenna Magnitude=-0.0mag Azimuth= 74.6° ENE altitude= 55.1° in constellation Cygnus Flare angle=3.80° Flare center line, closest point →MapIt: 

		Longitude=2.793° E Latitude=+49.332° (WGS84) Distance=61.6 km Azimuth= 32.7° NNE Satellite above: longitude=8.1° E latitude=+49.8° height above Earth=720.0 km distance to satellite=852.3 km Altitude of sun=-12.6° This is an experimental flare prediction. Brightness estimate may be unreliable. Please report a successful observation (Object/site coordinates/date/measured time/accuracy/magnitude).
5h11m36s	Resurs DK-1 (29228 2006-021-A) →Ground track →Star chart	Appears 5h09m30s 3.9mag az:196.3° SSW h:17.5° Culmination 5h11m36s 2.6mag az:117.0° ESE h:64.8° distance: 416.9km height above Earth: 379.7km elevation of sun: -12° Disappears 5h16m46s 9.1mag az: 32.4° NNE horizon 
5h24m07s	Eutelsat W7 Tk (36103 2009-065-C) →Ground track →Star chart	Appears 5h22m04s 4.7mag az:278.0° W h:10.8° Culmination 5h24m07s 2.4mag az: 6.3° N h:81.1° distance: 313.3km height above Earth: 309.8km elevation of sun: -11° Disappears 5h29m29s 8.7mag az: 96.1° E horizon 
5h28m17s	Cosmos 2428 (31792 2007-029-A) →Ground track →Star chart	Appears 5h20m10s 6.8mag az:328.6° NNW horizon Culmination 5h28m17s 3.5mag az:248.5° WSW h:56.8° distance: 1006.8km height above Earth: 863.1km elevation of sun: -10° Disappears 5h36m19s 6.3mag az:167.9° SSE horizon 
5h55m17s	Resurs 1-3 Rocket (23343 1994-074-B) →Ground track →Star chart	Appears 5h48m37s 7.2mag az: 12.9° NNE horizon Culmination 5h55m17s 2.4mag az:285.3° WNW h:84.9° distance: 649.5km height above Earth: 647.3km elevation of sun: -6° Disappears 6h01m54s 5.2mag az:197.4° SSW horizon 

59 Items/Events: Export to Outlook/iCal Print

Used satellite data set is from 1 May 2010

☐ 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.

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.

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.

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**".

Spare satellite or unknown status

Not all Iridium satellites are operational. Some of them are spare satellites and are in a fuel save mode. Hence the attitude of the satellite is not as strictly stabilized as for operational ones. Predictions of the flare's brightness are not that accurate in this case, a no-show is also possible.

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 timezone 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: 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 arond 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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