

Visibility of International Space Station ISS

Tuesday, 1 September 2020

Observer Site User Site, France

WGS84: Lon: +1d03m49.10s Lat: +43d14m03.25s Alt: 311m Geoid Alt: 261m

All times in CET or CEST (during summer)

Wednesday, 2 September 2020

4h42m42s

Appears 4h42m42s -1.6mag az: 35.9° NE h:28.4°



ISS

→Ground track

→Star chart

Disappears 4h46m41s 2.3mag az: 55.9° NE horizon

Ascending Orbit

TLE epoch: 20245.54273206 age: 14 hours



6h18m36s

Appears 6h15m39s -1.5mag az:297.3° WNW h:8.5°



ISS

→Ground track

→Star chart

Culmination 6h18m36s -1.8mag az:351.8° N h:20.5°

distance: 1017.9km height above Earth: 423.6km elevation of Sun: -12°

angular velocity: 0.41°/s

at Meridian 6h18m54s -1.6mag az: 0.0° N h:20.3°

Disappears 6h23m40s 3.7mag az: 60.3° ENE horizon

Descending Orbit

TLE epoch: 20245.54273206 age: 15 hours



Thursday, 3 September 2020

3h56m55s

Appears 3h56m55s 0.1mag az: 55.8° NE h:10.3°



ISS

→Ground track

→Star chart

Disappears 3h59m03s 1.6mag az: 57.2° ENE horizon

Ascending Orbit

TLE epoch: 20245.54273206 age: 37 hours



5h30m46s**Appears** **5h29m52s** -2.2mag az:321.7° NW h:20.8°

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[→Ground track](#)[→Star chart](#)**Culmination** **5h30m46s** -2.0mag az:346.7° NNW h:23.3°distance: 934.1km height above Earth: 423.4km elevation of Sun: -20°
angular velocity: 0.45°/s**at Meridian** **5h31m14s** -1.7mag az: 0.0° N h:22.6°**Disappears** **5h35m56s** 3.0mag az: 57.6° ENE horizon

Descending Orbit

TLE epoch: 20245.54273206 age: 38 hours

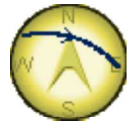
**7h08m23s****Appears** **7h03m19s** -0.7mag az:299.0° WNW horizon

ISS

[→Ground track](#)[→Star chart](#)**at Meridian** **7h08m06s** -1.7mag az: 0.0° N h:19.9°**Culmination** **7h08m23s** -1.5mag az: 7.1° N h:20.1°distance: 1030.9km height above Earth: 423.7km elevation of Sun: -3°
angular velocity: 0.41°/s**Disappears** **7h13m26s** 6.6mag az: 75.3° ENE horizon

Descending Orbit

TLE epoch: 20245.54273206 age: 40 hours



Friday, 4 September 2020

3h11m08s**Appears** **3h11m08s** 0.9mag az: 59.7° ENE h:1.4°

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[→Ground track](#)[→Star chart](#)**Disappears** **3h11m24s** 1.0mag az: 59.5° ENE horizon

Ascending Orbit

TLE epoch: 20245.54273206 age: 3 days

**4h44m05s****Appears** **4h44m05s** -1.3mag az: 16.1° NNE h:23.0°

ISS

[→Ground track](#)[→Star chart](#)**Disappears** **4h48m14s** 2.2mag az: 56.0° NE horizon

Descending Orbit

TLE epoch: 20245.54273206 age: 3 days

**6h20m31s****Appears** **6h17m02s** -1.2mag az:304.2° NW h:5.8°

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[→Ground track](#)[→Star chart](#)**at Meridian** **6h20m27s** -1.5mag az: 0.0° N h:19.1°**Culmination** **6h20m31s** -1.5mag az: 2.0° N h:19.1°distance: 1067.2km height above Earth: 423.7km elevation of Sun: -12°
angular velocity: 0.39°/s

Disappears 6h25m33s 4.1mag az: 69.1° ENE horizon
 Descending Orbit
 TLE epoch: 20245.54273206 age: 3 days

Saturday, 5 September 2020

2h20m09.64s



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**Close to Aldebaran, Alp Tau (SAO 94027, HIP 21421 HD 29139),
 Magnitude=0.9mag. Separation=1.305°**

Position Angle=344.9°, Position angle vertex=34.1°
 Angular diameter=27.3" size=109.0m x 73.0m x 27.5m
 Satellite at Azimuth= 84.5° E Altitude= 20.6° Distance=1013.3 km (**in shadow**)

In a clock-face concept, the satellite will seem to move toward 7:51
 Angular Velocity=17.3'/s

Centerline, closest point: Longitude= 0°48'50"E Latitude=+43°31'22"
 (WGS84) **Distance=37.87 km** Azimuth=327.9° NNW Path direction= 57.6° ENE
 ground speed=9.444 km/s

Sun altitude=-40° Elongation from Sun=93°

Orbit source: NASA predicted orbit; TLE epoch: 20248.55154209 age: 11 hours

3h58m18s



ISS

→Ground track
 →Star chart

Appears 3h58m18s 0.2mag az: 46.2° NE h:10.5°

Disappears 4h00m34s 1.6mag az: 55.5° NE horizon

Descending Orbit

Orbit source: NASA predicted orbit; TLE epoch: 20248.55154209 age: 13 hours



5h32m40s



ISS

→Ground track
 →Star chart

Appears 5h31m15s -1.7mag az:324.8° NW h:15.4°

Culmination 5h32m40s -1.5mag az:356.8° N h:19.2°

distance: 1062.2km height above Earth: 423.9km elevation of Sun: -20°
 angular velocity: 0.40°/s

at Meridian 5h32m47s -1.4mag az: 0.0° N h:19.2°

Disappears 5h37m42s 2.9mag az: 64.1° ENE horizon

Descending Orbit

Orbit source: NASA predicted orbit; TLE epoch: 20248.55154209 age: 14 hours



Appears 7h05m00s -0.7mag az:303.7° WNW horizon



7h10m14s



[→Ground track](#)
[→Star chart](#)

at Meridian 7h09m43s -2.1mag az: 0.0° N h:25.6°
Culmination 7h10m14s -1.8mag az: 17.2° NNE h:26.8°
 distance: 845.3km height above Earth: 423.5km elevation of Sun: -3°
 angular velocity: 0.50°/s
Disappears 7h15m27s 3.9mag az: 90.6° E horizon
 Descending Orbit
 Orbit source: NASA predicted orbit; TLE epoch: 20248.55154209 age: 16 hours

13h14m59s

Orbit maneuver rocket burn
 (CalSky takes this burn into account for pass predictions)

ISS

Sunday, 6 September 2020

1h29m14.74s

**Close to Fomalhaut, Alp PsA (SAO 191524, HIP113368 HD216956),
 Magnitude=1.2mag. Separation=1.481°**



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Position Angle=156.5°, Position angle vertex=160.9°
 Angular diameter=23.2" size=109.0m x 73.0m x 27.5m
 Satellite at Azimuth=174.2° S Altitude= 15.7° Distance=1194.0 km (in shadow)
 In a clock-face concept, the satellite will seem to move toward 9:38
 Angular Velocity=17.4'/s

Centerline, closest point: Longitude= 1°36'43"E Latitude=+42°38'37"
 (WGS84) Distance=79.35 km Azimuth=145.6° SE Path direction= 30.3° NNE
 ground speed=9.953 km/s
 Sun altitude=-40° Elongation from Sun=157°
 Orbit source: NASA predicted orbit; TLE epoch: 20249.51913750 age: 11 hours

3h11m55.26s

**Close to Pollux, Bet Gem (SAO 79666, HIP 37826 HD 62509),
 Magnitude=1.2mag. Separation=1.324°**



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Position Angle=72.4°, Position angle vertex=115.2°
 Angular diameter=14.1" size=109.0m x 73.0m x 27.5m
 Satellite at Azimuth= 54.0° NE Altitude= 4.2° Distance=1959.3 km (in shadow)
 In a clock-face concept, the satellite will seem to move toward 5:09
 Angular Velocity=4.9'/s

Centerline, closest point: Longitude= 1°28'51"E Latitude=+43°57'00"

(WGS84) **Distance=86.35 km** Azimuth= 22.7° NNE Path direction= 57.4° ENE
 ground speed=30.103 km/s
 Sun altitude=-37° Elongation from Sun=51°
 Orbit source: NASA predicted orbit; TLE epoch: 20249.51913750 age: 13 hours

3h12m33s**Appears** **3h12m33s** 0.9mag az: 55.3° NE h:1.7°

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Disappears **3h12m55s** 1.1mag az: 55.9° NE horizon
 Ascending Orbit

→Ground track
 →Star chart

Orbit source: NASA predicted orbit; TLE epoch: 20249.51913750 age: 13 hours

4h42m56.20s**Close to Vega, Alp Lyr (SAO 67174, HIP 91262 HD172167),**
Magnitude=0.0mag. Separation=0.914°

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Position Angle=245.6°, Position angle vertex=199.8°
 Angular diameter=21.5" size=109.0m x 73.0m x 27.5m
 Satellite at Azimuth=310.4° NW Altitude= 13.9° Distance=1287.9 km (in shadow)
 In a clock-face concept, the satellite will seem to move toward 2:21
 Angular Velocity=15.9'/s

Centerline, closest point: Longitude= 1°00'35"E Latitude=+43°40'32"
 (WGS84) **Distance=49.22 km** Azimuth=355.0° N Path direction= 95.9° E
 ground speed=9.888 km/s
 Sun altitude=-27° Elongation from Sun=104°
 Orbit source: NASA predicted orbit; TLE epoch: 20249.51913750 age: 14 hours

4h45m30s**Appears** **4h45m30s** -1.1mag az: 9.5° N h:19.4°

ISS

Disappears **4h49m53s** 2.2mag az: 60.3° ENE horizon
 Descending Orbit

→Ground track
 →Star chart

Orbit source: NASA predicted orbit; TLE epoch: 20249.51913750 age: 14 hours

6h22m25s**Appears** **6h18m27s** -1.0mag az:307.8° NW h:4.5°

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at Meridian **6h21m59s** -1.8mag az: 0.0° N h:21.9°**Culmination** **6h22m25s** -1.5mag az: 12.2° NNE h:22.5°

distance: 956.5km height above Earth: 423.7km elevation of Sun: -12°
 angular velocity: 0.44°/s

Disappears **6h27m33s** 3.3mag az: 82.4° E horizon

Descending Orbit

→Ground track
 →Star chart

Orbit source: NASA predicted orbit; TLE epoch: 20249.51913750 age: 16 hours

Monday, 7 September 2020

3h59m50s

Appears 3h59m50s 0.3mag az: 42.8° NE h:9.9°


ISS

→Ground track

→Star chart

Disappears 4h02m10s 1.6mag az: 57.6° ENE horizon

Descending Orbit

Orbit source: NASA predicted orbit; TLE epoch: 20250.48673191 age: 14 hours

5h34m37s

Appears 5h32m47s -1.6mag az:327.0° NNW h:13.9°


ISS

→Ground track

→Star chart

at Meridian 5h34m21s -1.5mag az: 0.0° N h:19.9°

Culmination 5h34m37s -1.4mag az: 7.1° N h:20.1°

 distance: 1031.5km height above Earth: 424.0km elevation of Sun: -20°
 angular velocity: 0.41°/s

Disappears 5h39m40s 2.5mag az: 75.2° ENE horizon

Descending Orbit

Orbit source: NASA predicted orbit; TLE epoch: 20250.48673191 age: 16 hours

7h11m59s

Appears 7h06m34s -0.7mag az:304.3° NW horizon


ISS

→Ground track

→Star chart

at Meridian 7h11m34s -3.0mag az: 0.0° N h:44.4°

Culmination 7h11m59s -2.8mag az: 26.7° NNE h:47.8°

 distance: 556.8km height above Earth: 422.9km elevation of Sun: -3°
 angular velocity: 0.76°/s

Disappears 7h17m23s 2.1mag az:109.1° ESE horizon

Descending Orbit

Orbit source: NASA predicted orbit; TLE epoch: 20250.48673191 age: 17 hours

Tuesday, 8 September 2020

1h29m29.75s

Close to Saturn. Separation=0.753°


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Position Angle=326.3°, Position angle vertex=295.4°

Angular diameter=22.2" size=109.0m x 73.0m x 27.5m

Satellite at Azimuth=221.9° SW Altitude= 14.6° Distance=1243.3 km (in shadow)

In a clock-face concept, the satellite will seem to move toward 11:09
Angular Velocity=9.2'/s

Centerline, closest point: Longitude= 0°54'50"E Latitude=+43°21'20" (WGS84)
Distance=18.12 km Azimuth=318.1° NW Path direction= 47.8° NE ground
speed=12.737 km/s width=0.2 km max. duration=0.0 s
Sun altitude=-41° Elongation from Sun=130°
Orbit source: NASA predicted orbit; TLE epoch: 20251.51882862 age: 11 hours

1h35m09.57s

**Close to Elnath/Al Nath, Bet Tau (SAO 77168, HIP 25428 HD 35497),
Magnitude=1.6mag. Separation=1.132°**



ISS

Position Angle=199.3°, Position angle vertex=246.8°
Angular diameter=20.3" size=109.0m x 73.0m x 27.5m
Satellite at Azimuth= 63.7° ENE Altitude= 12.4° Distance=1360.7 km (in
shadow)
In a clock-face concept, the satellite will seem to move toward 6:47
Angular Velocity=7.9'/s

Centerline, closest point: Longitude= 1°14'54"E Latitude=+43°00'50" (WGS84)
Distance=28.69 km Azimuth=148.5° SSE Path direction= 57.6° ENE ground
speed=13.166 km/s
Sun altitude=-41° Elongation from Sun=83°
Orbit source: NASA predicted orbit; TLE epoch: 20251.51882862 age: 11 hours

3h14m10s

Appears 3h14m10s 1.0mag az: 55.1° NE h:1.3°



ISS

→Ground track
→Star chart

Disappears 3h14m26s 1.1mag az: 56.0° NE horizon

Descending Orbit

Orbit source: NASA predicted orbit; TLE epoch: 20251.51882862 age: 13 hours



4h47m08s

Appears 4h47m08s -1.1mag az: 11.8° NNE h:18.7°



ISS

→Ground track
→Star chart

Disappears 4h51m45s 1.9mag az: 69.0° ENE horizon

Descending Orbit

Orbit source: NASA predicted orbit; TLE epoch: 20251.51882862 age: 14 hours



6h24m13s

Appears 6h20m05s -1.1mag az:308.7° NW h:5.0°



ISS

→Ground track
→Star chart

at Meridian 6h23m41s -2.4mag az: 0.0° N h:32.0°

Culmination 6h24m13s -2.2mag az: 22.0° NNE h:34.2°

distance: 707.9km height above Earth: 423.0km elevation of Sun: -12°
angular velocity: 0.59°/s



Disappears 6h29m32s 2.0mag az: 99.4° E horizon

Descending Orbit

Orbit source: NASA predicted orbit; TLE epoch: 20251.51882862 age: 16 hours

Wednesday, 9 September 2020

4h01m37s

Appears 4h01m37s 0.4mag az: 47.5° NE h:9.1°



ISS

[→Ground track](#)

[→Star chart](#)

Disappears 4h03m55s 1.4mag az: 64.0° ENE horizon

Descending Orbit

Orbit source: NASA predicted orbit; TLE epoch: 20252.48642128 age: 14 hours

5h36m28s

Appears 5h34m35s -1.8mag az:329.1° NNW h:16.6°



ISS

[→Ground track](#)

[→Star chart](#)

at Meridian 5h35m56s -2.0mag az: 0.0° N h:25.5°

Culmination 5h36m28s -1.7mag az: 17.1° NNE h:26.7°

distance: 847.1km height above Earth: 423.4km elevation of Sun: -20°
angular velocity: 0.50°/s

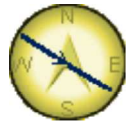
Disappears 5h41m41s 1.8mag az: 90.5° E horizon

Descending Orbit

Orbit source: NASA predicted orbit; TLE epoch: 20252.48642128 age: 16 hours

7h13m31s

Appears 7h08m04s -0.7mag az:301.2° WNW horizon



ISS

[→Ground track](#)

[→Star chart](#)

Culmination 7h13m31s -4.0mag az:215.6° SW h:70.0°

distance: 446.9km height above Earth: 421.9km elevation of Sun: -4°
angular velocity: 0.95°/s

at Meridian 7h13m46s -3.8mag az:180.0° S h:65.8°

Disappears 7h18m56s 1.0mag az:130.0° SE horizon

Descending Orbit

Orbit source: NASA predicted orbit; TLE epoch: 20252.48642128 age: 18 hours

12h07m59s

Orbit maneuver rocket burn

(CalSky takes this burn into account for pass predictions)

ISS

Thursday, 10 September 2020

1h32m59.17s

Close to Vega, Alp Lyr (SAO 67174, HIP 91262 HD172167),
Magnitude=0.0mag. Separation=0.661°



ISS

Position Angle=98.3°, Position angle vertex=35.4°

Angular diameter=46.2" size=109.0m x 73.0m x 27.5m

Satellite at Azimuth=287.3° WNW Altitude= 43.0° Distance=598.7 km (in shadow)

In a clock-face concept, the satellite will seem to move toward 1:49

Angular Velocity=37.1'/s

Centerline, closest point: Longitude= 1°06'15"E Latitude=+43°09'45"
(WGS84) Distance=8.62 km Azimuth=157.5° SSE Path direction= 64.3° ENE
ground speed=7.681 km/s

Sun altitude=-42° Elongation from Sun=103°

Orbit source: NASA predicted orbit; TLE epoch: 20253.45401106 age: 13 hours

4h49m10s

Appears 4h49m10s -1.1mag az: 27.2° NNE h:21.6°



ISS

Disappears 4h53m45s 1.5mag az: 82.3° E horizon

Descending Orbit

Orbit source: NASA predicted orbit; TLE epoch: 20253.45401106 age: 16 hours



→Ground track

→Star chart

6h25m51s

Appears 6h22m09s -1.4mag az:305.0° NW h:8.1°



ISS

at Meridian 6h25m40s -3.8mag az: 0.0° N h:70.1°

Culmination 6h25m51s -3.8mag az: 31.2° NNE h:72.8°

distance: 440.3km height above Earth: 422.2km elevation of Sun: -12°
angular velocity: 0.96°/s

Disappears 6h31m17s 1.1mag az:119.1° ESE horizon

Descending Orbit

Orbit source: NASA predicted orbit; TLE epoch: 20253.45401106 age: 18 hours



22h33m52s

Orbit maneuver rocket burn. The orbit of the ISS will be raised by 1.5 km within 223 seconds to 411.9 km x 424.7 km

ISS

(CalSky takes this burn into account for pass predictions)

Friday, 11 September 2020

0h49m50.27s

**Close to Elnath/Al Nath, Bet Tau (SAO 77168, HIP 25428 HD 35497),
Magnitude=1.6mag. Separation=0.976°**



ISS

Position Angle=50.8°, Position angle vertex=95.2°

Angular diameter=16.5" size=109.0m x 73.0m x 27.5m

Satellite at Azimuth= 56.4° ENE Altitude= 7.5° Distance=1680.7 km (in shadow)

In a clock-face concept, the satellite will seem to move toward 5:50

Angular Velocity=5.5'/s

Centerline, closest point: Longitude= 0°52'27"E Latitude=+43°27'06"
(WGS84) Distance=28.60 km Azimuth=327.7° NNW Path direction= 57.5° ENE
ground speed=20.939 km/s

Sun altitude=-40° Elongation from Sun=86°

Orbit source: NASA predicted orbit; TLE epoch: 20254.87314047 age: 1.9 hours

2h26m58.67s

**Close to Castor, Alp Gem (SAO 60198, HIP 36850 HD 60179),
Magnitude=1.6mag. Separation=0.103°**



ISS

Position Angle=284.3°, Position angle vertex=325.7°

Angular diameter=15.0" size=109.0m x 73.0m x 27.5m

Satellite at Azimuth= 50.3° NE Altitude= 5.6° Distance=1840.2 km (in shadow)

In a clock-face concept, the satellite will seem to move toward 4:09

Angular Velocity=7.8'/s

Centerline, closest point: Longitude= 1°05'57"E Latitude=+43°11'29"
(WGS84) Distance=5.56 km Azimuth=148.8° SSE Path direction= 57.7° ENE
ground speed=26.202 km/s

Sun altitude=-42° Elongation from Sun=59°

Orbit source: NASA predicted orbit; TLE epoch: 20254.87314047 age: 3.5 hours

4h03m59s

Appears 4h03m59s 0.4mag az: 62.8° ENE h:7.6°



ISS

Disappears 4h05m54s 1.1mag az: 75.1° ENE horizon

Descending Orbit

Orbit source: NASA predicted orbit; TLE epoch: 20254.87314047 age: 5.1 hours

→Ground track

→Star chart



Appears 5h37m00s -2.8mag az:331.1° NNW h:30.6°

5h38m14s



→Ground track
→Star chart

at Meridian 5h37m48s -3.1mag az: 0.0° N h:44.2°
Culmination 5h38m14s -2.9mag az: 26.6° NNE h:47.6°
 distance: 560.0km height above Earth: 424.1km elevation of Sun:
 -20° angular velocity: 0.75°/s



Disappears 5h43m38s 1.0mag az:108.9° ESE horizon
 Descending Orbit

Orbit source: NASA predicted orbit; TLE epoch: 20254.87314047 age: 6.7 hours

5h39m22.67s

**Close to Pollux, Bet Gem (SAO 79666, HIP 37826 HD 62509),
 Magnitude=1.2mag. Separation=0.798°**



ISS

Position Angle=85.9°, Position angle vertex=140.4°
 Angular diameter=37.2" size=109.0m x 73.0m x 27.5m
 Satellite at Azimuth= 80.1° E Altitude= 32.1° Distance=742.6 km
Magnitude=-1.7mag

In a clock-face concept, the satellite will seem to move toward 4:19
 Angular Velocity=26.4'/s

Centerline, closest point: Longitude= 1°07'54"E Latitude=+43°20'42"
 (WGS84) **Distance=13.48 km** Azimuth= 24.1° NNE Path direction=113.7° ESE
 ground speed=8.001 km/s

Sun altitude=-20° Elongation from Sun=56°

Orbit source: NASA predicted orbit; TLE epoch: 20254.87314047 age: 6.7 hours

7h14m53s

Appears 7h10m00s -0.9mag az:293.3° WNW h:1.3°



ISS

→Ground track
→Star chart

Culmination 7h14m53s -2.9mag az:223.9° SW h:25.1°
 distance: 885.5km height above Earth: 422.5km elevation of Sun: -4°
 angular velocity: 0.48°/s



at Meridian 7h16m38s -1.9mag az:180.0° S h:16.6°

Disappears 7h20m00s 0.3mag az:153.3° SSE horizon

Descending Orbit

Orbit source: NASA predicted orbit; TLE epoch: 20254.87314047 age: 8 hours

22h21m36.10s

**Close to Fomalhaut, Alp PsA (SAO 191524, HIP113368 HD216956),
 Magnitude=1.2mag. Separation=1.452°**



ISS

Position Angle=323.6°, Position angle vertex=355.8°
 Angular diameter=16.2" size=109.0m x 73.0m x 27.5m
 Satellite at Azimuth=140.4° SE Altitude= 7.1° Distance=1706.1 km (in
 shadow)

(too low: no centerline for this transit)

Orbit source: NASA predicted orbit; TLE epoch: 20254.87314047 age: 23 hours

Saturday, 12 September 2020

4h47m39.43s

Close to Vega, Alp Lyr (SAO 67174, HIP 91262 HD172167),
Magnitude=0.0mag. Separation=0.671°



ISS

Position Angle=263.8°, Position angle vertex=221.6°

Angular diameter=18.6" size=109.0m x 73.0m x 27.5m

Satellite at Azimuth=314.6° NW Altitude= 10.4° Distance=1485.6 km (in shadow)

In a clock-face concept, the satellite will seem to move toward 1:37

Angular Velocity=9.2'/s

Centerline, closest point: Longitude= 1°13'59"E Latitude=+43°25'26"
(WGS84) Distance=25.13 km Azimuth= 33.0° NNE Path direction=123.0° ESE
ground speed=14.742 km/s

Sun altitude=-28° Elongation from Sun=102°

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 5.1 hours

4h52m14s

Appears 4h52m14s -1.1mag az: 70.7° ENE h:22.7°



ISS

Disappears 4h56m04s 0.9mag az: 99.4° E horizon

Descending Orbit

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 5.1 hours

→Ground track

→Star chart



6h27m36s

Appears 6h25m15s -2.3mag az:285.4° WNW h:16.3°



ISS

Culmination 6h27m36s -3.7mag az:219.9° SW h:41.2°

distance: 617.7km height above Earth: 422.9km elevation of Sun: -12°

angular velocity: 0.68°/s

at Meridian 6h28m29s -3.0mag az:180.0° S h:33.1°

Disappears 6h32m55s 0.4mag az:141.3° SE horizon

Descending Orbit

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 6.7 hours

→Ground track

→Star chart



Sunday, 13 September 2020

2h28m44.78s

Close to Castor, Alp Gem (SAO 60198, HIP 36850 HD 60179),
Magnitude=1.6mag. Separation=0.407°

ISS



Position Angle=290.7°, Position angle vertex=333.2°
 Angular diameter=16.2" size=109.0m x 73.0m x 27.5m
 Satellite at Azimuth= 52.0° NE Altitude= 7.2° Distance=1708.2 km (in shadow)
 In a clock-face concept, the satellite will seem to move toward 3:54
 Angular Velocity=9.9'/s

Centerline, closest point: Longitude= 1°12'01"E Latitude=+43°01'24"
 (WGS84) Distance=25.91 km Azimuth=154.7° SSE Path direction= 65.2° ENE
 ground speed=18.848 km/s
 Sun altitude=-42° Elongation from Sun=61°
 Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 27 hours

4h07m24.67s

Close to Procyon, Alp CMi (SAO 115756, HIP 37279 HD 61421),
Magnitude=0.4mag. Separation=0.067°



ISS

Position Angle=92.4°, Position angle vertex=139.3°
 Angular diameter=13.9" size=109.0m x 73.0m x 27.5m
 Satellite at Azimuth= 86.4° E Altitude= 3.9° Distance=1985.9 km (in shadow)
 In a clock-face concept, the satellite will seem to move toward 4:21
 Angular Velocity=6.4'/s

Centerline, closest point: Longitude= 1°03'51"E Latitude=+43°16'08"
 (WGS84) Distance=3.86 km Azimuth= 0.7° N Path direction= 90.9° E
 ground speed=36.047 km/s
 Sun altitude=-34° Elongation from Sun=56°
 Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 28 hours

4h07m42s

Appears 4h07m42s 0.5mag az: 87.8° E h:2.8°



ISS

→Ground track
 →Star chart

Disappears 4h08m23s 0.7mag az: 90.5° E horizon

Descending Orbit

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 28 hours



5h40m45s

Appears 5h40m45s -3.8mag az:159.1° SSE h:56.2°



ISS

→Ground track
 →Star chart

Disappears 5h45m39s 0.4mag az:130.0° SE horizon

Descending Orbit

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 30 hours



Appears 7h13m47s -1.3mag az:268.7° W h:4.4°



ISS

→Ground track

→Star chart

Culmination 7h16m26s -1.7mag az:231.6° SW h:9.0°

distance: 1568.0km height above Earth: 421.7km elevation of Sun: -4° angular velocity: 0.27°/s

Disappears 7h20m34s -0.3mag az:181.4° S horizon

Descending Orbit

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 32 hours



Monday, 14 September 2020

3h17m39.78s

Close to Castor, Alp Gem (SAO 60198, HIP 36850 HD 60179),

Magnitude=1.6mag. Separation=1.446°



ISS

Position Angle=108.4°, Position angle vertex=156.3°

Angular diameter=21.1" size=109.0m x 73.0m x 27.5m

Satellite at Azimuth= 59.3° ENE Altitude= 13.4° Distance=1312.7 km (in shadow)

In a clock-face concept, the satellite will seem to move toward 3:47

Angular Velocity=14.6'/s

Centerline, closest point: Longitude= 1°35'51"E Latitude=+43°51'26" (WGS84) **Distance=81.49 km** Azimuth= 31.7° NNE Path direction= 90.3° E ground speed=10.020 km/s

Sun altitude=-40° Elongation from Sun=62°

Time uncertainty of about 1.1 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 2 days

4h53m26.47s

Close to Elnath/Al Nath, Bet Tau (SAO 77168, HIP 25428 HD 35497),

Magnitude=1.6mag. Separation=0.279°



ISS

Position Angle=242.5°, Position angle vertex=297.8°

Angular diameter=52.6" size=109.0m x 73.0m x 27.5m

Satellite at Azimuth= 98.3° E Altitude= 52.2° Distance=525.7 km (in shadow)

In a clock-face concept, the satellite will seem to move toward 5:04

Angular Velocity=40.9'/s

Centerline, closest point: Longitude= 1°02'48"E Latitude=+43°12'49" (WGS84) **Distance=2.68 km** Azimuth=210.6° SSW Path direction=120.7° ESE ground speed=7.570 km/s

Sun altitude=-28° Elongation from Sun=89°

Time uncertainty of about 1.1 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 2 days

4h56m30s**Appears** **4h56m30s** **-0.5mag** **az:117.6° ESE** **h:7.9°****ISS**

→Ground track

→Star chart

Disappears **4h58m13s** **0.4mag** **az:119.3° ESE** **horizon**

Descending Orbit

Time uncertainty of about 1 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 2 days

**6h29m33s****Appears** **6h29m33s** **-2.2mag** **az:220.3° SW** **h:15.2°****ISS**

→Ground track

→Star chart

Disappears **6h33m57s** **-0.2mag** **az:166.7° SSE** **horizon**

Descending Orbit

Time uncertainty of about 1 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 2 days

**21h33m01s****Appears** **21h32m04s** **-0.3mag** **az:189.8° S** **horizon****ISS**

→Ground track

→Star chart

Disappears **21h33m01s** **-0.7mag** **az:183.5° S** **h:3.4°**

Ascending Orbit

Time uncertainty of about 2 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 3 days



Tuesday, 15 September 2020

5h45m34s**Appears** **5h45m34s** **-0.8mag** **az:160.5° SSE** **h:5.9°****ISS**

→Ground track

→Star chart

Disappears **5h47m01s** **-0.1mag** **az:153.6° SSE** **horizon**

Descending Orbit

Time uncertainty of about 2 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 3 days

**20h48m53s****Appears** **20h45m31s** **-0.4mag** **az:174.5° S** **horizon****ISS**

→Ground track

→Star chart

Disappears **20h48m53s** **-1.5mag** **az:136.0° SE** **h:7.4°**

Ascending Orbit

Time uncertainty of about 4 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 4 days



Close to Antares, Alp Sco (SAO 184415, HIP 80763 HD148478),
Magnitude=1.1mag. Separation=0.578°



Position Angle=145.3°, Position angle vertex=109.2°
 Angular diameter=14.4" size=109.0m x 73.0m x 27.5m
 Satellite at Azimuth=226.0° SW Altitude= 4.5° Distance=1924.3 km
Magnitude=-0.3mag

In a clock-face concept, the satellite will seem to move toward 11:22
 Angular Velocity=4.7'/s

Centerline, closest point: Longitude= 1°14'02"E Latitude=+43°05'54"
 (WGS84) **Distance=20.45 km** Azimuth=137.5° SE Path direction= 48.1° NE
 ground speed=32.070 km/s

Sun altitude=-24° Elongation from Sun=77°

Time uncertainty of about 3.6 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 4 days

22h21m56s

Appears 22h20m12s 0.2mag az:227.2° SW horizon



Disappears 22h21m56s -0.7mag az:224.8° SW h:8.0°

Ascending Orbit

→Ground track
 →Star chart

Time uncertainty of about 4 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 4 days

Wednesday, 16 September 2020

0h07m03.96s

**Close to Elnath/Al Nath, Bet Tau (SAO 77168, HIP 25428 HD 35497),
 Magnitude=1.6mag. Separation=1.230°**



Position Angle=95.3°, Position angle vertex=137.3°

Angular diameter=13.5" size=109.0m x 73.0m x 27.5m

Satellite at Azimuth= 52.8° NE Altitude= 3.3° Distance=2046.7 km (in shadow)

In a clock-face concept, the satellite will seem to move toward 4:25

Angular Velocity=6.0'/s

Centerline, closest point: Longitude= 3°11'29"E Latitude=+44°48'10"
 (WGS84) **Distance=243.47 km** Azimuth= 43.6° NE Path direction= 61.5° ENE
 ground speed=22.327 km/s

Sun altitude=-39° Elongation from Sun=91°

Time uncertainty of about 3.8 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 4 days

21h37m30s

Appears 21h32m55s 0.2mag az:215.7° SW horizon

ISS

→Ground track

→Star chart

Disappears 21h37m30s -3.1mag az:168.6° SSE h:32.0°

Ascending Orbit

Time uncertainty of about 6 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 5 days



23h10m32s

Appears 23h09m40s 0.7mag az:258.2° WSW horizon

ISS

→Ground track

→Star chart

Disappears 23h10m32s 0.3mag az:260.8° W h:3.6°

Ascending Orbit

Time uncertainty of about 6 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 5 days



Thursday, 17 September 2020

20h47m40.14s

**Close to Shaula, Lam Sco (SAO 208954, HIP 85927 HD158926),
Magnitude=1.6mag. Separation=0.873°**

ISS

Position Angle=162.4°, Position angle vertex=150.5°

Angular diameter=16.6" size=109.0m x 73.0m x 27.5m

Satellite at Azimuth=192.7° SSW Altitude= 7.6° Distance=1662.2 km

Magnitude=-0.9mag

In a clock-face concept, the satellite will seem to move toward 9:59

Angular Velocity=9.4'/s

Centerline, closest point: Longitude= 1°13'59"E Latitude=+42°29'15"
(WGS84) **Distance=84.12 km** Azimuth=170.5° S Path direction= 26.6° NNE
ground speed=17.253 km/s

Sun altitude=-9° Elongation from Sun=90°

Time uncertainty of about 8 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 6 days

20h50m51s

Appears 20h45m48s 0.1mag az:203.4° SSW horizon

ISS

→Ground track

→Star chart

at Meridian 20h48m50s -1.7mag az:180.0° S h:13.7°**Culmination** 20h50m51s -2.7mag az:135.1° SE h:22.2°distance: 964.0km height above Earth: 422.2km elevation of Sun: -10°
angular velocity: 0.47°/s**Disappears** 20h52m47s -2.2mag az: 91.4° E h:14.2°

Ascending Orbit

Time uncertainty of about 8 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 6 days

22h25m47s

Appears 22h22m01s 0.8mag az:248.5° WSW horizon

ISS

→Ground track

→Star chart

Disappears 22h25m47s -1.6mag az:265.3° W h:25.4°

Ascending Orbit

Time uncertainty of about 8 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 6 days

Friday, 18 September 2020

1h47m13.98s

**Close to Betelgeuse, Alp Ori (SAO 113271, HIP 27989 HD 39801),
Magnitude=0.5mag. Separation=1.393°**

ISS

Position Angle=95.5°, Position angle vertex=142.2°

Angular diameter=12.3" size=109.0m x 73.0m x 27.5m

Satellite at Azimuth= 81.1° E Altitude= 1.4° Distance=2242.5 km (in shadow)

In a clock-face concept, the satellite will seem to move toward 4:16

Angular Velocity=5.7'/s

Centerline, closest point: Longitude= 6°44'22"E Latitude=+44°05'53"
(WGS84) Distance=466.10 km Azimuth= 76.2° ENE Path direction= 93.8° E
ground speed=20.462 km/s

Sun altitude=-45° Elongation from Sun=87°

Time uncertainty of about 9 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 6 days

3h20m42.29s

**Close to Aldebaran, Alp Tau (SAO 94027, HIP 21421 HD 29139),
Magnitude=0.9mag. Separation=0.821°**

ISS

Position Angle=244.2°, Position angle vertex=291.3°

Angular diameter=43.8" size=109.0m x 73.0m x 27.5m

Satellite at Azimuth=106.8° ESE Altitude= 40.0° Distance=631.4 km (in shadow)

In a clock-face concept, the satellite will seem to move toward 5:17

Angular Velocity=28.9'/s

Centerline, closest point: Longitude= 1°00'18"E Latitude=+43°09'41"

(WGS84) **Distance=9.39 km** Azimuth=210.4° SSW Path direction=120.5° ESE
ground speed=7.880 km/s

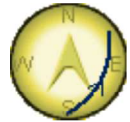
Sun altitude=-41° Elongation from Sun=105°

Time uncertainty of about 9 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 6 days

20h03m32s

Appears 19h58m54s 0.0mag az:190.0° S horizon



ISS

→Ground track

→Star chart

at Meridian 20h00m18s -0.7mag az:180.0° S h:4.9°

Culmination 20h03m32s -2.1mag az:131.2° SE h:13.6°

distance: 1295.7km height above Earth: 421.8km elevation of Sun: -1°
angular velocity: 0.35°/s

Disappears 20h07m47s -1.0mag az: 74.9° ENE h:1.5°

Ascending Orbit

Time uncertainty of about 11 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 7 days

21h39m54s

Appears 21h34m27s 0.8mag az:238.2° WSW horizon



ISS

→Ground track

→Star chart

Culmination 21h39m54s -4.0mag az:327.6° NNW h:81.7°

distance: 427.4km height above Earth: 423.4km elevation of Sun: -19°
angular velocity: 1.07°/s

at Meridian 21h40m00s -4.1mag az: 0.0° N h:80.2°

Disappears 21h40m47s -3.7mag az: 48.7° NE h:46.4°

Ascending Orbit

Time uncertainty of about 11 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 7 days

23h13m47s

Appears 23h11m56s 1.1mag az:275.7° W horizon



ISS

→Ground track

→Star chart

Disappears 23h13m47s 0.4mag az:286.1° WNW h:7.5°

Ascending Orbit

Time uncertainty of about 11 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 7 days

23h19m26.25s

**Close to Capella, Alp Aur (SAO 40186, HIP 24608 HD 34029),
Magnitude=0.1mag. Separation=1.360°**



ISS

Position Angle=113.9°, Position angle vertex=154.2°

Angular diameter=20.3" size=109.0m x 73.0m x 27.5m

Satellite at Azimuth= 37.5° NE Altitude= 12.5° Distance=1361.0 km (in shadow)

In a clock-face concept, the satellite will seem to move toward 3:51

Angular Velocity=13.4'/s

Centerline, closest point: Longitude= 1°14'07"E Latitude=+43°56'23"
(WGS84) **Distance=79.60 km** Azimuth= 9.9° N Path direction= 64.2° ENE
ground speed=10.643 km/s

Sun altitude=-34° Elongation from Sun=94°

Time uncertainty of about 11 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 7 days

Saturday, 19 September 2020

2h34m26.44s



ISS

**Close to Bellatrix, Gam Ori (SAO 112740, HIP 25336 HD 35468),
Magnitude=1.6mag. Separation=1.047°**

Position Angle=262.2°, Position angle vertex=309.0°

Angular diameter=24.2" size=109.0m x 73.0m x 27.5m

Satellite at Azimuth= 97.6° E Altitude= 17.1° Distance=1142.6 km (in shadow)

In a clock-face concept, the satellite will seem to move toward 4:42

Angular Velocity=12.0'/s

Centerline, closest point: Longitude= 0°57'38"E Latitude=+43°00'31"
(WGS84) **Distance=26.43 km** Azimuth=198.5° SSW Path direction=110.6° ESE
ground speed=10.794 km/s

Sun altitude=-44° Elongation from Sun=95°

Time uncertainty of about 12 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 7 days

20h52m25s



ISS

→Ground track

→Star chart

Appears 20h47m00s 0.8mag az:227.3° SW horizon

at Meridian 20h52m02s -3.7mag az:180.0° S h:55.8°

Culmination 20h52m25s -4.1mag az:143.3° SE h:61.5°

distance: 476.5km height above Earth: 423.0km elevation of Sun: -11°
angular velocity: 0.95°/s

Disappears 20h55m34s -1.8mag az: 63.0° ENE h:11.3°

Ascending Orbit

Time uncertainty of about 14 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 8 days



Appears 22h24m10s 1.4mag az:267.4° W horizon



ISS

→Ground track

→Star chart

Disappears 22h28m33s -1.3mag az:313.5° NW h:24.8°

Ascending Orbit

Time uncertainty of about 15 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 8 days



Sunday, 20 September 2020

0h10m08.22s

Close to Elnath/Al Nath, Bet Tau (SAO 77168, HIP 25428 HD 35497),
Magnitude=1.6mag. Separation=0.305°



ISS

Position Angle=289.4°, Position angle vertex=333.4°

Angular diameter=16.2" size=109.0m x 73.0m x 27.5m

Satellite at Azimuth= 56.8° ENE Altitude= 7.3° Distance=1701.9 km (in shadow)

In a clock-face concept, the satellite will seem to move toward 3:53

Angular Velocity=10.0'/s

Centerline, closest point: Longitude= 1°08'38"E Latitude=+43°04'12"
(WGS84) Distance=19.36 km Azimuth=160.4° SSE Path direction= 70.4° ENE
ground speed=18.510 km/s

Sun altitude=-40° Elongation from Sun=95°

Time uncertainty of about 15 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 8 days

1h46m00.03s

May occult Elnath/Al Nath, Bet Tau (SAO 77168, HIP 25428 HD 35497),
Magnitude=1.6mag. Separation=0.010°



ISS

Position Angle=98.2°, Position angle vertex=150.1°

Angular diameter=29.0" size=109.0m x 73.0m x 27.5m

Satellite at Azimuth= 71.3° ENE Altitude= 22.6° Distance=954.1 km (in shadow)

In a clock-face concept, the satellite will seem to move toward 4:00

Angular Velocity=20.2'/s

Centerline, closest point: Longitude= 1°03'52"E Latitude=+43°14'11"
(WGS84) Distance=0.25 km Azimuth= 14.9° NNE Path direction=105.4° ESE
ground speed=8.652 km/s

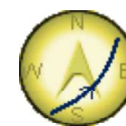
Sun altitude=-46° Elongation from Sun=95°

Time uncertainty of about 15 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 8 days

20h04m58s

Appears 19h59m41s 0.7mag az:215.8° SW horizon



ISS

→Ground track
→Star chart

at Meridian 20h03m54s -2.5mag az:180.0° S h:28.0°

Culmination 20h04m58s -3.3mag az:139.1° SE h:36.3°

distance: 677.1km height above Earth: 422.6km elevation of Sun: -2°

angular velocity: 0.66°/s

Disappears 20h10m11s -0.8mag az: 62.9° ENE h:0.8°

Ascending Orbit

Time uncertainty of about 18 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 9 days

21h39m49.66s

Close to Arcturus, Alp Boo (SAO 100944, HIP 69673 HD124897),
Magnitude=-0.1mag. Separation=0.642°

ISS

Position Angle=86.1°, Position angle vertex=36.5°

Angular diameter=26.0" size=109.0m x 73.0m x 27.5m

Satellite at Azimuth=278.6° W Altitude= 19.2° Distance=1063.7 km

Magnitude=-0.3mag

In a clock-face concept, the satellite will seem to move toward 1:47

Angular Velocity=15.9'/s

Centerline, closest point: Longitude= 1°06'43"E Latitude=+43°04'21"
(WGS84) Distance=18.40 km Azimuth=167.7° SSE Path direction= 75.9° ENE
ground speed=10.122 km/s

Sun altitude=-19° Elongation from Sun=40°

Time uncertainty of about 19 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 9 days

21h41m46s

Appears 21h36m25s 1.6mag az:258.3° WSW horizon



ISS

→Ground track
→Star chart

Culmination 21h41m46s -2.4mag az:336.9° NNW h:36.8°

distance: 672.4km height above Earth: 424.2km elevation of Sun: -20°

angular velocity: 0.68°/s

at Meridian 21h42m17s -2.6mag az: 0.0° N h:34.3°

Disappears 21h43m09s -2.4mag az: 25.8° NNE h:24.9°

Ascending Orbit

Time uncertainty of about 19 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 9 days

23h15m02.59s

Close to Arcturus, Alp Boo (SAO 100944, HIP 69673 HD124897),
Magnitude=-0.1mag. Separation=1.030°

ISS

Position Angle=76.5°, Position angle vertex=31.9°

Angular diameter=13.4" size=109.0m x 73.0m x 27.5m
 Satellite at Azimuth=294.0° WNW Altitude= 3.2° Distance=2061.3 km
Magnitude=1.1mag
 (too low: no centerline for this transit)
 Time uncertainty of about 19 seconds
 Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 9 days

23h16m08s

Appears 23h14m13s 1.4mag az:289.6° WNW horizon

ISS

→Ground track
 →Star chart

Disappears 23h16m08s 0.6mag az:302.2° WNW h:7.4°

Ascending Orbit

Time uncertainty of about 19 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 9 days

Monday, 21 September 2020

0h58m43.08s

**Close to Elnath/Al Nath, Bet Tau (SAO 77168, HIP 25428 HD 35497),
 Magnitude=1.6mag. Separation=1.475°**



ISS

Position Angle=285.5°, Position angle vertex=334.2°

Angular diameter=23.8" size=109.0m x 73.0m x 27.5m

Satellite at Azimuth= 65.5° ENE Altitude= 16.6° Distance=1163.5 km (**in shadow**)

In a clock-face concept, the satellite will seem to move toward 3:52

Angular Velocity=16.4'/s

Centerline, closest point: Longitude= 0°39'22"E Latitude=+42°42'47" (WGS84)

Distance=66.71 km Azimuth=209.9° SSW Path direction= 96.7° E ground
 speed=9.429 km/s

Sun altitude=-45° Elongation from Sun=96°

Time uncertainty of about 19 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 9 days

2h34m33.54s

Close to Mars. Separation=0.330°

ISS

Position Angle=217.6°, Position angle vertex=236.8°

Angular diameter=51.5" size=109.0m x 73.0m x 27.5m

Satellite at Azimuth=153.7° SSE Altitude= 50.5° Distance=536.6 km (**in shadow**)

In a clock-face concept, the satellite will seem to move toward 7:06

Angular Velocity=40.1'/s

Centerline, closest point: Longitude= 1°02'22"E Latitude=+43°12'38" (WGS84)
Distance=3.29 km Azimuth=216.7° SW Path direction=126.6° SE ground
 speed=7.589 km/s width=0.1 km max. duration=0.0 s
 Sun altitude=-45° Elongation from Sun=151°
 Time uncertainty of about 19 seconds
 Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 9 days

20h54m09s

Appears 20h48m44s 1.8mag az:248.6° WSW horizon

ISS

→Ground track

→Star chart

Culmination 20h54m09s -3.1mag az:332.2° NNW h:52.5°

distance: 524.3km height above Earth: 423.8km elevation of Sun: -12°
 angular velocity: 0.86°/s

at Meridian 20h54m32s -3.3mag az: 0.0° N h:49.0°**Disappears** 20h57m38s -1.6mag az: 51.3° NE h:9.1°

Ascending Orbit

Time uncertainty of about 23 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 10 days

22h30m36s

Appears 22h26m25s 1.9mag az:283.2° WNW horizon

ISS

→Ground track

→Star chart

Disappears 22h30m36s -0.9mag az:329.0° NNW h:18.6°

Ascending Orbit

Time uncertainty of about 23 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 10 days

Tuesday, 22 September 2020

18h29m57.71s

Close to Saturn. Separation=1.113°

ISS

Position Angle=325.5°, Position angle vertex=358.5°

Angular diameter=21.3" size=109.0m x 73.0m x 27.5m

Satellite at Azimuth=136.0° SE Altitude= 13.6° Distance=1298.0 km

Magnitude=-1.8mag

In a clock-face concept, the satellite will seem to move toward 9:03

Angular Velocity=19.5'/s

Centerline, closest point: Longitude= 0°08'23"W Latitude=+43°55'17" (WGS84)
Distance=123.34 km Azimuth=308.7° NW Path direction= 37.2° NE ground
 speed=7.492 km/s width=0.3 km max. duration=0.0 s

Sun altitude=+14° Elongation from Sun=115°

Time uncertainty of about 27 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 11 days

20h06m35s

Appears 20h01m08s 1.8mag az:238.2° WSW horizon



ISS

→Ground track
→Star chart

Culmination 20h06m35s -3.8mag az:327.7° NNW h:81.5°

distance: 427.4km height above Earth: 423.4km elevation of Sun: -3°
angular velocity: 1.05°/s

at Meridian 20h06m40s -3.9mag az: 0.0° N h:80.0°

Disappears 20h12m01s -0.8mag az: 57.2° ENE h:0.6°

Ascending Orbit

Time uncertainty of about 27 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 11 days

21h43m46s

Appears 21h38m36s 2.5mag az:275.7° W horizon



ISS

→Ground track
→Star chart

Culmination 21h43m46s -1.7mag az:346.7° NNW h:23.4°

distance: 934.3km height above Earth: 424.8km elevation of Sun: -21°
angular velocity: 0.49°/s

at Meridian 21h44m13s -1.9mag az: 0.0° N h:22.7°

Disappears 21h44m58s -1.9mag az: 18.6° NNE h:19.2°

Ascending Orbit

Time uncertainty of about 28 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 11 days

23h17m56s

Appears 23h16m18s 1.6mag az:298.9° WNW horizon



ISS

→Ground track
→Star chart

Disappears 23h17m56s 0.7mag az:308.7° NW h:6.2°

Ascending Orbit

Time uncertainty of about 28 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 11 days

23h22m49.14s

**Close to Capella, Alp Aur (SAO 40186, HIP 24608 HD 34029),
Magnitude=0.1mag. Separation=0.090°**



ISS

Position Angle=121.1°, Position angle vertex=164.2°

Angular diameter=23.1" size=109.0m x 73.0m x 27.5m

Satellite at Azimuth= 40.6° NE Altitude= 15.9° Distance=1196.6 km (in shadow)

In a clock-face concept, the satellite will seem to move toward 3:32

Angular Velocity=18.5'/s

Centerline, closest point: Longitude= 1°03'29"E Latitude=+43°16'42" (WGS84)
Distance=4.94 km Azimuth=354.9° N Path direction= 85.4° E ground
 speed=8.721 km/s
 Sun altitude=-36° Elongation from Sun=98°
 Time uncertainty of about 28 seconds
 Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 11 days

Wednesday, 23 September 2020

2h33m46.67s



ISS

Close to Altair, Alp Aql (SAO 125122, HIP 97649 HD187642),
Magnitude=0.8mag. Separation=0.579°

Position Angle=205.6°, Position angle vertex=158.2°
 Angular diameter=24.4" size=109.0m x 73.0m x 27.5m
 Satellite at Azimuth=265.3° W Altitude= 17.3° Distance=1132.9 km (in shadow)
 In a clock-face concept, the satellite will seem to move toward 9:43
 Angular Velocity=18.0'/s

Centerline, closest point: Longitude= 0°53'47"E Latitude=+43°03'05" (WGS84)
Distance=24.42 km Azimuth=213.8° SW Path direction=121.7° ESE ground
 speed=9.385 km/s
 Sun altitude=-46° Elongation from Sun=117°
 Time uncertainty of about 29 seconds
 Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 11 days

17h42m52.34s



ISS

Close to Saturn. Separation=1.085°

Position Angle=322.2°, Position angle vertex=0.5°
 Angular diameter=16.7" size=109.0m x 73.0m x 27.5m
 Satellite at Azimuth=127.6° SE Altitude= 7.7° Distance=1657.6 km
Magnitude=-1.3mag
 In a clock-face concept, the satellite will seem to move toward 8:59
 Angular Velocity=15.3'/s

Centerline, closest point: Longitude= 2°23'11"W Latitude=+45°28'58" (WGS84)
Distance=370.82 km Azimuth=313.5° NW Path direction= 31.5° NNE ground
 speed=7.489 km/s width=0.4 km max. duration=0.0 s
 Sun altitude=+22° Elongation from Sun=114°
 Time uncertainty of about 32 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 12 days

20h56m03s**Appears** **20h50m48s** 3.2mag az:267.4° W horizon

ISS

[→Ground track](#)
[→Star chart](#)**Culmination** **20h56m03s** **-2.0mag** az:341.7° NNW **h:28.3°**distance: 816.2km height above Earth: 424.5km elevation of Sun: -13°
angular velocity: 0.56°/s**at Meridian** **20h56m35s** -2.3mag az: 0.0° N h:26.8°**Disappears** **20h59m16s** -1.5mag az: 45.7° NE h:8.8°

Ascending Orbit

Time uncertainty of about 33 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 12 days

22h32m13s**Appears** **22h28m35s** 2.1mag az:294.8° WNW horizon

ISS

[→Ground track](#)
[→Star chart](#)**Disappears** **22h32m13s** -0.6mag az:330.6° NNW h:15.4°

Ascending Orbit

Time uncertainty of about 33 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 12 days

Thursday, 24 September 2020

16h55m23.68s**Close to Jupiter.** Separation=0.888°

ISS

Position Angle=140.5°, Position angle vertex=179.8°

Angular diameter=13.5" size=109.0m x 73.0m x 27.5m

Satellite at Azimuth=126.5° SE Altitude= 3.2° Distance=2045.4 km

Magnitude=-0.7mag

In a clock-face concept, the satellite will seem to move toward 9:00

Angular Velocity=12.4'/s

Centerline, closest point: Longitude= 4°30'40"E Latitude=+41°28'18" (WGS84)**Distance=344.21 km** Azimuth=123.5° ESE Path direction= 36.4° NE ground
speed=7.457 km/s width=0.7 km max. duration=0.0 s

Sun altitude=+29° Elongation from Sun=106°

Time uncertainty of about 38 seconds

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 13 days

Appears **20h03m00s** 3.6mag az:258.3° WSW horizon**20h08m21s**



→Ground track
→Star chart

Culmination 20h08m21s -2.5mag az:336.9° NNW h:36.8°
 distance: 672.4km height above Earth: 424.1km elevation of Sun: -4°
 angular velocity: 0.67°/s
at Meridian 20h08m52s -2.7mag az: 0.0° N h:34.3°
Disappears 20h13m31s -0.8mag az: 55.0° NE h:1.1°
 Ascending Orbit
 Time uncertainty of about 39 seconds
 Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 13 days

21h45m50s

Appears 21h40m47s 2.8mag az:289.6° WNW horizon



ISS

→Ground track
→Star chart

Culmination 21h45m50s -1.6mag az:356.9° N h:19.3°
 distance: 1062.9km height above Earth: 425.0km elevation of Sun: -22°
 angular velocity: 0.43°/s
at Meridian 21h45m57s -1.6mag az: 0.0° N h:19.2°
Disappears 21h46m28s -1.8mag az: 12.5° NNE h:18.4°
 Ascending Orbit
 Time uncertainty of about 39 seconds
 Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 13 days

23h19m25s

Appears 23h18m09s 1.6mag az:303.7° WNW horizon



ISS

→Ground track
→Star chart

Disappears 23h19m25s 0.9mag az:309.2° NW h:5.0°
 Ascending Orbit
 Time uncertainty of about 39 seconds
 Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 13 days

Friday, 25 September 2020

20h58m02s

Appears 20h52m58s 3.8mag az:283.1° WNW horizon



ISS

→Ground track
→Star chart

Culmination 20h58m02s -1.7mag az:351.7° N h:20.6°
 distance: 1017.8km height above Earth: 424.9km elevation of Sun: -14°
 angular velocity: 0.45°/s
at Meridian 20h58m21s -1.8mag az: 0.0° N h:20.3°
Disappears 21h00m40s -1.6mag az: 42.9° NE h:10.1°
 Descending Orbit
 Time uncertainty of about 0.7 minutes
 Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 14 days

22h33m37s

Appears 22h30m30s 2.1mag az:301.8° WNW horizon



ISS
→Ground track
→Star chart

Disappears 22h33m37s -0.3mag az:326.2° NW h:13.9°

Descending Orbit

Time uncertainty of about 0.8 minutes

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 14 days



Saturday, 26 September 2020

20h10m16s

Appears 20h05m06s 5.5mag az:275.7° W horizon



ISS
→Ground track
→Star chart

Culmination 20h10m16s -1.9mag az:346.7° NNW h:23.4°

distance: 933.9km height above Earth: 424.7km elevation of Sun: -5°

angular velocity: 0.48°/s

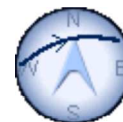
at Meridian 20h10m43s -2.1mag az: 0.0° N h:22.7°

Disappears 20h14m50s -1.0mag az: 55.0° NE h:2.4°

Descending Orbit

Time uncertainty of about 0.9 minutes

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 15 days



21h47m47s

Appears 21h42m48s 2.5mag az:298.9° WNW horizon



ISS
→Ground track
→Star chart

Disappears 21h47m47s -1.8mag az: 4.9° N h:20.2°

Descending Orbit

Time uncertainty of about 0.9 minutes

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 15 days



23h20m44s

Appears 23h19m49s 1.5mag az:304.2° NW horizon



ISS
→Ground track
→Star chart

Disappears 23h20m44s 1.0mag az:306.2° NW h:3.8°

Descending Orbit

Time uncertainty of about 0.9 minutes

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 15 days



Sunday, 27 September 2020

Close to Mercury. Separation=1.457°

17h43m37.35s



ISS

Position Angle=146.3°, Position angle vertex=118.0°

Angular diameter=29.6" size=109.0m x 73.0m x 27.5m

Satellite at Azimuth=217.7° SW Altitude= 23.2° Distance=933.2 km

Magnitude=0.3mag

In a clock-face concept, the satellite will seem to move toward 11:04

Angular Velocity=15.1'/s

Centerline, closest point: Longitude= 1°16'27"E Latitude=+43°03'28" (WGS84)**Distance=26.00 km** Azimuth=138.9° SE Path direction= 50.0° NE ground speed=9.581 km/s width=0.1 km max. duration=0.0 s

Sun altitude=+20° Elongation from Sun=25°

Time uncertainty of about 1.0 minutes

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 16 days

21h00m04s

Appears 20h55m02s 2.9mag az:294.8° WNW horizon

ISS

at Meridian 20h59m59s -1.7mag az: 0.0° N h:19.1°**Culmination** 21h00m04s **-1.8mag** az: 2.0° N **h:19.2°**distance: 1067.4km height above Earth: 425.0km elevation of Sun: -15°
angular velocity: 0.42°/s**Disappears** 21h01m57s -1.8mag az: 41.8° NE h:13.1°

Descending Orbit

Time uncertainty of about 1 minutes

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 16 days

→Ground track

→Star chart

22h34m53s

Appears 22h32m12s 2.0mag az:304.4° NW horizon

ISS

Disappears 22h34m53s -0.1mag az:317.8° NW h:13.0°

Descending Orbit

Time uncertainty of about 1 minutes

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 16 days

→Ground track

→Star chart

Monday, 28 September 2020

0h13m59.28s

**Close to Altair, Alp Aql (SAO 125122, HIP 97649 HD187642),
Magnitude=0.8mag. Separation=0.174°**

ISS

Position Angle=205.2°, Position angle vertex=165.0°

Angular diameter=42.7" size=109.0m x 73.0m x 27.5m

Satellite at Azimuth=241.2° WSW Altitude= 38.6° Distance=647.1 km (in

shadow)

In a clock-face concept, the satellite will seem to move toward 9:30
Angular Velocity=37.7'/s

Centerline, closest point: Longitude= 1°02'28"E Latitude=+43°12'48"
(WGS84) Distance=2.95 km Azimuth=218.0° SW Path direction=127.6° SE
ground speed=7.520 km/s

Sun altitude=-44° Elongation from Sun=113°

Time uncertainty of about 1.0 minutes

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 16 days

20h12m14s



ISS

→Ground track
→Star chart

Appears 20h07m12s 3.1mag az:289.5° WNW horizon



Culmination 20h12m14s -1.8mag az:356.8° N h:19.3°

distance: 1062.7km height above Earth: 425.0km elevation of Sun: -6°
angular velocity: 0.42°/s

at Meridian 20h12m22s -1.9mag az: 0.0° N h:19.2°

Disappears 20h16m06s -1.2mag az: 57.5° ENE h:4.4°

Descending Orbit

Time uncertainty of about 1 minutes

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 17 days

21h49m03s



ISS

→Ground track
→Star chart

Appears 21h44m34s 2.3mag az:303.7° WNW horizon



Disappears 21h49m03s -1.9mag az:353.0° N h:24.4°

Descending Orbit

Time uncertainty of about 1 minutes

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 17 days

23h21m59s



ISS

→Ground track
→Star chart

Appears 23h21m24s 1.5mag az:301.1° WNW horizon



Disappears 23h21m59s 1.1mag az:300.8° WNW h:2.6°

Descending Orbit

Time uncertainty of about 1 minutes

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 17 days

Tuesday, 29 September 2020

Appears 20h56m52s 2.3mag az:301.8° WNW horizon

21h02m01s



[→Ground track](#)
[→Star chart](#)

at Meridian 21h01m35s -2.0mag az: 0.0° N h:22.0°
Culmination 21h02m01s -2.2mag az: 12.2° NNE h:22.6°
 distance: 956.7km height above Earth: 424.6km elevation of Sun: -16° angular velocity: 0.47°/s



Disappears 21h03m13s -2.3mag az: 43.0° NE h:18.8°
 Descending Orbit

Time uncertainty of about 1 minutes

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 18 days

22h36m09s

Appears 22h33m46s 1.9mag az:303.1° WNW horizon



ISS

[→Ground track](#)
[→Star chart](#)

Disappears 22h36m09s 0.1mag az:305.9° NW h:12.0°

Descending Orbit

Time uncertainty of about 1 minutes

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 18 days



Wednesday, 30 September 2020

20h14m12s

Appears 20h09m07s 2.2mag az:298.9° WNW horizon



ISS

[→Ground track](#)
[→Star chart](#)

at Meridian 20h13m55s -1.9mag az: 0.0° N h:20.0°

Culmination 20h14m12s -2.0mag az: 7.1° N h:20.2°

distance: 1031.9km height above Earth: 424.8km elevation of Sun: -7°
 angular velocity: 0.43°/s

Disappears 20h17m23s -1.5mag az: 63.4° ENE h:7.3°

Descending Orbit

Time uncertainty of about 1 minutes

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 19 days



21h50m20s

Appears 21h46m08s 2.2mag az:304.2° NW horizon



ISS

[→Ground track](#)
[→Star chart](#)

Disappears 21h50m20s -2.1mag az:331.1° NNW h:30.8°

Descending Orbit

Time uncertainty of about 1 minutes

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 19 days



23h23m17s

Appears 23h23m04s 1.3mag az:294.2° WNW horizon



ISS

[→Ground track](#)

Disappears 23h23m17s 1.2mag az:293.4° WNW h:1.1°

Descending Orbit



[→Star chart](#)

Time uncertainty of about 1 minutes

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 19 days

Thursday, 1 October 2020

1h03m59.52s

Close to Jupiter. Separation=0.453°

ISS

Position Angle=41.6°, Position angle vertex=359.3°

Angular diameter=11.8" size=109.0m x 73.0m x 27.5m

Satellite at Azimuth=238.7° WSW Altitude= 0.5° Distance=2351.4 km (in shadow)

(too low: no centerline for this transit)

Time uncertainty of about 1.4 minutes

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 19 days

21h03m50s

Appears 20h58m29s 2.1mag az:304.4° NW horizon

ISS

[→Ground track](#)[→Star chart](#)**at Meridian** 21h03m18s -2.6mag az: 0.0° N h:32.1°**Culmination** 21h03m50s -3.0mag az: 22.0° NNE h:34.3°distance: 708.0km height above Earth: 423.9km elevation of Sun: -17°
angular velocity: 0.64°/s**Disappears** 21h04m33s -3.1mag az: 50.3° NE h:30.5°

Descending Orbit

Time uncertainty of about 2 minutes

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 20 days



22h37m30s

Appears 22h35m19s 1.9mag az:298.2° WNW horizon

ISS

[→Ground track](#)[→Star chart](#)**Disappears** 22h37m30s 0.3mag az:291.2° WNW h:10.2°

Descending Orbit

Time uncertainty of about 2 minutes

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 20 days



Friday, 2 October 2020

20h16m03s

Appears 20h10m48s 1.9mag az:303.6° WNW horizon

ISS

at Meridian 20h15m31s -2.3mag az: 0.0° N h:25.6°

[→Ground track](#)[→Star chart](#)**Culmination** 20h16m03s -2.6mag az: 17.1° NNE h:26.8°distance: 847.4km height above Earth: 424.3km elevation of Sun: -8°
angular velocity: 0.53°/s**Disappears** 20h18m48s -1.9mag az: 75.9° ENE h:11.1°

Descending Orbit

Time uncertainty of about 2 minutes

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 21 days

21h51m45s**Appears** 21h47m38s 2.2mag az:301.2° WNW horizon**ISS**[→Ground track](#)[→Star chart](#)**Disappears** 21h51m45s -1.9mag az:290.9° WNW h:32.9°

Descending Orbit

Time uncertainty of about 2 minutes

Orbit source: NASA predicted orbit; TLE epoch: 20255.90541204 age: 21 days

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