

Interactive Spreadsheets for Celestial Navigation



<http://www.navigation-spreadsheets.com>

The spreadsheets available through this website are designed to increase the accuracy, reliability, and speed with which you can derive your position from sextant observations. The ubiquity of Microsoft Excel® and other compatible third-party software allows you to easily perform the requisite calculations on your computer, laptop, or a smartphone using this suite of spreadsheets.

For only US\$9.99, this suite can provide and process data essential in celestial navigation:

- Almanac data (calculation of Geographical Positions of main celestial bodies)
- Sextant altitude corrections
- Solutions of the navigation triangle (the Marcq St. Hilaire intercept method)
- Intersections of lines of position (direct two-body and many-body fixes)
- Running fixes and sailings
- Noon sights, noon curves, and meridian transits, including the effect of vessel motion
- Dead reckoning (DR) positions and a DR fix along a line of position
- Lunar distance clearing and UT recovery

GP of Moon					
Enter Universal Time					
Year	Month	Day	Hours	Minutes	Seconds
2011	01	01	12	00	00
GHA	Degrees	Minutes	Declination	Degrees	Minutes
	37	09.9	S 23		39.1
SD (')		HP (')		Age (d)	Phase (%)
15.7		57.6		27	9
#####					

This image shows the user part of the Moon almanac spreadsheet, which you may freely download and test on your computing platform.

Download link: <http://www.navigation-spreadsheets.com/uploads/moon.xls>

Alphabetical list of spreadsheets

1. **alt_corr**: sextant altitude corrections
2. **alt_prec**: precomputed sextant altitude
3. **amplitude**: amplitude and azimuth of a rising or a setting body
4. **aries_stars**: GHA of Aries and GPs of 57 main navigation stars
5. **average1**: averaging of sights (precomputed slope)
6. **average2**: averaging of sights (fitted slope)
7. **composite**: composite sailing calculation
8. **course_and_speed**: ground speed from the vessel speed and speed of current
9. **course_to_steer**: vessel course from set and drift and desired ground track
10. **cpa.xls**: closest point of approach from two ranges and relative bearings
11. **dip_short**: dip short of the horizon
12. **distance**: distance by vertical angle
13. **dr**: dead reckoning position (DRP)
14. **dr_fix_lop**: estimated position (EP) from a DRP and a celestial LOP
15. **ex_meridian**: ex-meridian latitude calculation
16. **ground_speed**: ground speed from vessel speed and set and drift
17. **intercept**: intercept and azimuth for the St. Hilaire method
18. **jupiter**: almanac data for Jupiter
19. **ld_prec**: geocentric and topocentric lunar distance from almanac data
20. **lops**: two-body fix (using spatial geometry)
21. **lunar_distance**: LD clearing and chronometer resetting
22. **many_body_fix**: multiple LOP fix calculation
23. **mars**: almanac data for Mars
24. **mercury**: almanac data for Mercury
25. **minutes**: conversion of fractional angles into minutes of arc
26. **moon**: almanac data for Moon
27. **neptune**: almanac data for Neptune
28. **noon_curve**: Sun LAN curve fix
29. **noon_motion**: Sun LAN curve fix with motion of the vessel
30. **noon_sight**: Sun LAN fix
31. **one_body_fix**: fix from a zenith distance and azimuth
32. **polaris**: latitude from Polaris (UT input)
33. **polaris_lha**: latitude from Polaris (LHA input)
34. **running_fix**: running fix (LOP1 advanced in time)
35. **sailings**: great-circle and rhumb-line sailings
36. **saturn**: almanac data for Saturn
37. **set_and_drift**: set and drift from the difference between DRP and EP
38. **sun**: almanac data for Sun
39. **time**: conversion of time data between formats
40. **transit**: fix from a meridian transit on a moving vessel
41. **two_body_fix**: two-body fix (using spherical trigonometry)
42. **uranus**: almanac data for Uranus
43. **venus**: almanac data for Venus
44. **waypoints**: rhumb-line sailing between great-circle waypoints
45. **what_star**: star identification based on altitude and azimuth

