

Some of you have requested real data to use to experiment with various data massaging techniques to improve the accuracy of observed altitudes. This data was obtained onboard the Royal Clipper on a transatlantic crossing in 2009. I am providing the raw data for six observations of Venus taken in a six minute period for you to number-crunch.

Greenwich date: November 6, 2009

All times are GMT with no watch error.

Height of eye: 33 feet.

Index error: + 1.3'.

Course: 251° true.

Speed: 11 knots.

Body: Venus.

Measured azimuth for the first shot was 102° true and for all the rest was 103° true.

Approximate location at middle of series was 14° 25' north, 55° 00' west.

I have the GPS coordinates for each shot and will supply them later so we can see how well the number-crunching did.

Number	Time	Sextant altitude
1	9:13:38	9° 54.8'
2	9:15:06	10° 14.6'
3	9:16:13	10° 31.2'
4	9:17:06	10° 42.6'
5	9:18:15	10° 57.9'
6	9:19:22	11° 13.1'

I have another 6 shots of Venus taken a little bit earlier the same day but over a period of 21 minutes which you may want to combine with the other six shots, or not, due to the long time span. I have 3 more shots of Venus taken slightly later that you can also combine, or not, due to the long time period. In total, there are 15 shots taken over a 39 minute period. All the rest of the conditions remain the same except for the measured azimuths for the earlier shots.

Earlier series.

The measured azimuth to the first two shots was 101° true and for the last four shots the azimuth was 102° true.

Number	Time	Sextant altitude
A1	8:49:09	$4^\circ 14.8'$
A2	8:51:04	$4^\circ 44.1'$
A3	9:06:52	$8^\circ 20.6'$
A4	9:08:18	$8^\circ 40.3'$
A5	9:09:28	$8^\circ 55.9'$
A6	9:10:32	$9^\circ 10.5'$

The third series, all the measured azimuths were 103° true.

B1	9:22:53	$12^\circ 01.8'$
B2	9:24:06	$12^\circ 19.1'$
B3	9:27:43	$13^\circ 09.5'$