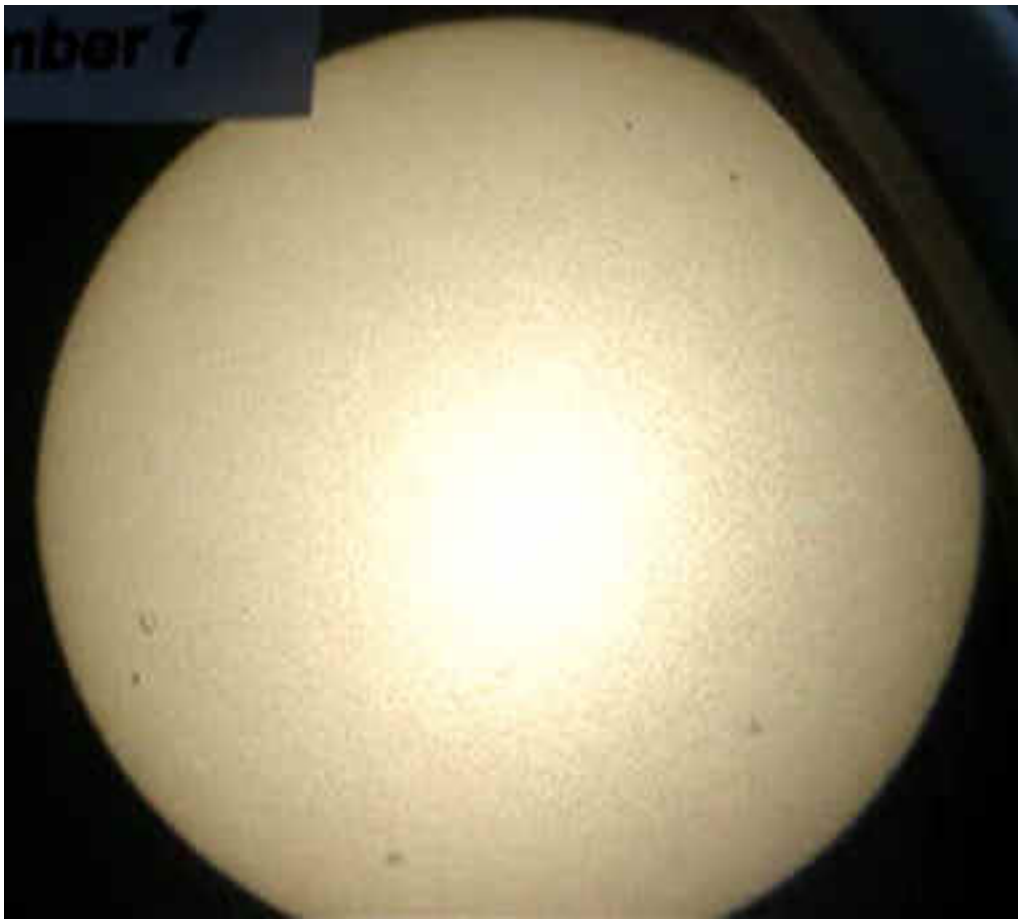
Witness an International Space Station (ISS) transit on a rear projection screen .



Using a rear projection screen made from inexpensive parts, several people can gather around a telescope and witness a transit of the International Space Station across the sun.

This excerpt from an ISS Transit Alert indicates a solar transit will occur September 7 at 12:28:41 local time. The centerline is 0.5 miles away from the home site, but the observer can be up to 1.4 miles away and still see a chord of the ISS travel across the sun's surface.

Minimum transit distances during the current reporting period:

Sun 0.5 mi

A - travel distance (miles) and direction B - date C - time (hhmmss) D - elevation angle of the ISS E - azimuth angle of the ISS (+ is East from North; - is W from N) F - range (miles) G - latitude for observing the transit H - longitude I - elevation above Mean Sea Level (meters) J - how far (miles) can I be from the centerline? (i.e., angular error = 0.25°)

For other than solar transits:

K - lunar transits: is space station sunlit?

planetary encounters: 1=Mercury; 2=Venus; 4=Mars; 5=Jupiter; 6=Saturn L - sun elevation angle M - sun/moon or sun/planet separation angle

A------- B----- C----- D--- E----- F--- G------- H-------- I--- J---- K L---- M----

9.0 SW 7 Sep 122839 54.1 173.8 263 41.6609 -86.3077 215 1.4

4.4 SW 7 Sep 122840 54.1 173.9 263 41.7034 -86.2378 227 1.4

0.5 E 7 Sep 122841 54.1 174.0 263 41.7457 -86.1679 244 1.4

[other data snipped]


The rear projection screen is mounted on the reflector telescope, whose aperture is stopped down. A white light solar filter is on the smaller refractor telescope.

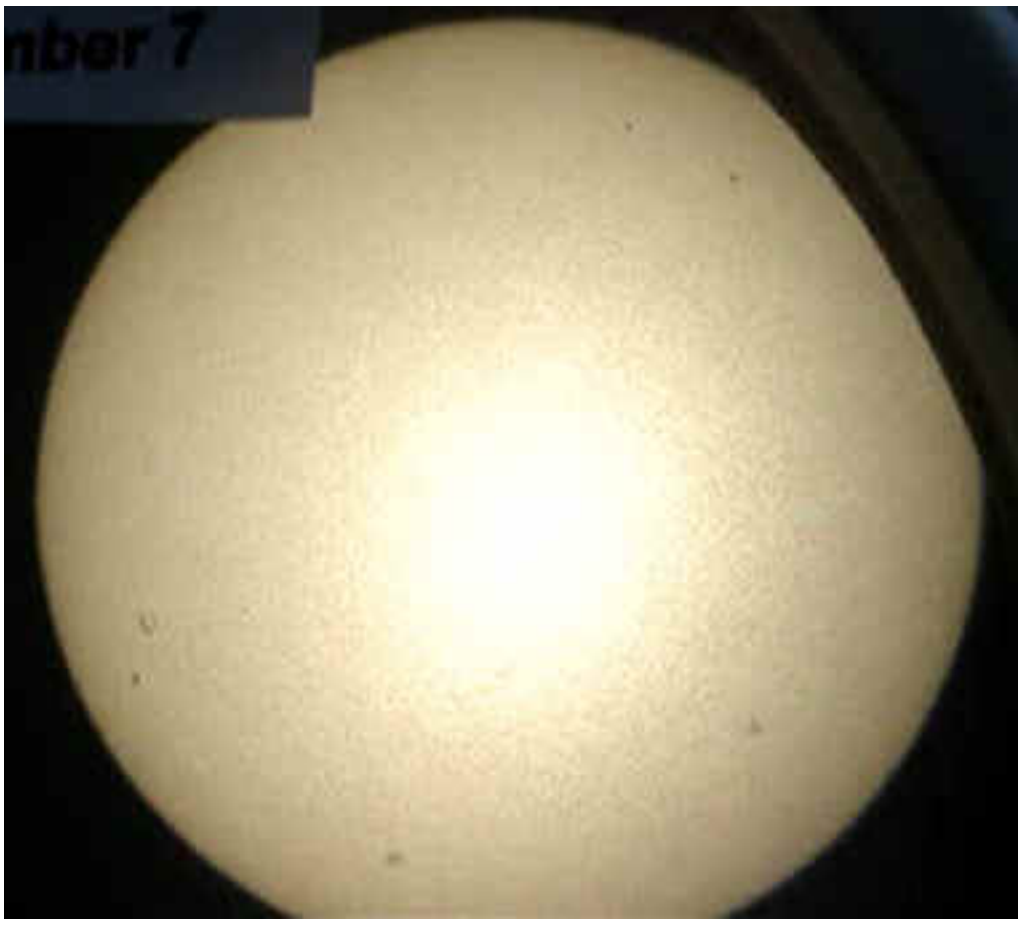

Moments before the scheduled transit, the video camera was ready on a tripod--except for having charged batteries.

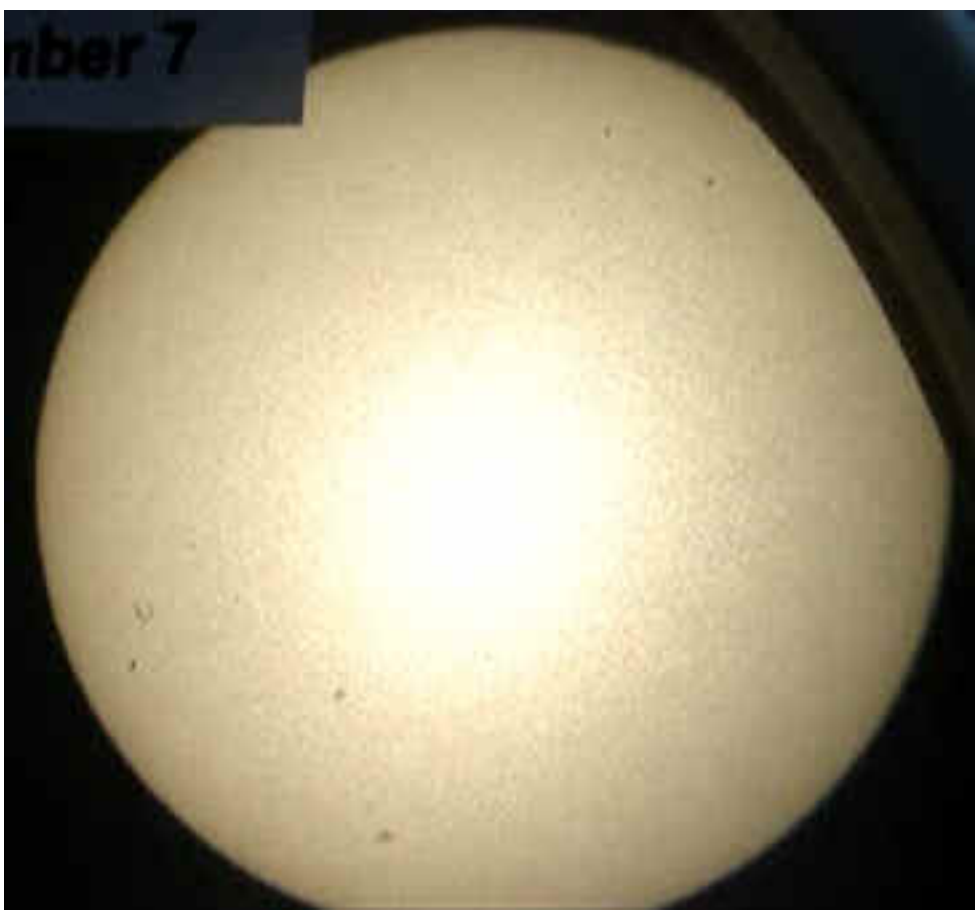

The regular camera was quickly pressed into service under video mode.


One major and several minor sunspots were easily visible that day. (SOHO image)

Below are a few shaky frames I grabbed from my hand-held camera in its video mode. Through the projection screen, the shape of the ISS is less defined than when looking through a 60 mm refractor with a solar filter. A friend using the refractor readily described the “wings” of the ISS as if it were a fly moving across the field of view. The view is decidedly better through a scope lens than on a projection screen, but then you’re limited to just one person at the viewer.

The ISS appears in the lower right corner of the sun, about 4:30 on the clock, and moves to the left. The dot near 6:30 is a large sunspot, while above it is a faint, indistinguishable sunspot group. The other visible marks are lint and dirt that I did not remove in time for the transit. In person the contrast is better than on these low-resolution images.





The ISS is the fainter dot below the curled dust on the lower left edge.

The screen was built at a workshop supported in part by a PLATO grant. ISS transit predictions are courtesy of Thomas Fly's ISS Transit Alert Service.

For images and video of ISS transits see http://127.0.0.1:4664/cache?event_id=155199&schema_id=2&q=iss+transit&s=2YNe0x8MMHiP3-C1k1VGssxonXw.

Thank you, Don and Mary, for your onsite participation in the September 7, 2006, transit.

www.transitofvenus.org