

6 METER NET CHRONICLES

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PURPOSE

The purpose of this TEARA 6 meter special science issue is to provide some form of useful science information for the benefit of the readers of the 6 METER NET CHRONICLES.

The topic for this issue will be spotting the International Space Station. The editors would like to thank Hal Spencer, K4NKR for bringing this issue to our attention.

TEARA (Triangle East Amateur Radio Association)

The Triangle East Amateur Radio Association meets the fourth Tuesday of each month, at 7:00 pm, in the social hall of the Wendell United Methodist church. Individuals start arriving around 6:00 to 6:30 pm and bring their dinner and socialize until the meeting starts at 7:00 pm. TEARA has very good programs of interest to hams. Please give the club a visit and consider becoming a member. TEARA does not meet during the month of December.

OBSERVING THE INTERNATIONAL SPACE STATION

To obtain information about the passage of the international space station over the Raleigh area, first go to the following web site:

<http://spaceflight1.nasa.gov/realdata/sightings/help.html>

Next, click on the heading - **Realtime Data** - that is listed as one of the options along the top of the page. Then on the next page that comes up click on Sighting Opportunities. Next accept the United States as the country of interest and click on Go To County. At the Go To County page select North Carolina. Then select Raleigh and up will come about a weeks worth of viewing time, location, etc. information.

As an example, the data posted for 09/02/06 are as follows:

SATELLITE	LOCAL DATE/TIME	DURATION (MIN)	MAX ELEV (DEG)	APPROACH (DEG-DIR)	DEPARTURE (DEG-DIR)
ISS	Wed Aug 30/09:32 PM	< 1	11	10 above N	11 above NNE
ISS	Fri Sep 01/08:43 PM	2	11	10 above N	10 above NE
ISS	Sat Sep 02/09:06 PM	1	26	17 above N	26 above NNE
ISS	Mon Sep 04/08:17 PM	4	26	14 above NNW	14 above E
ISS	Tue Sep 05/08:42 PM	2	84	56 above WNW	32 above SE
ISS	Wed Sep 06/09:05 PM	1	20	19 above WSW	18 above SSW
ISS	Thu Sep 07/07:55 PM	1	20	20 above SE	10 above SE
ISS	Fri Sep 08/08:16 PM	2	20	20 above SW	11 above S

The explanation of the data presented in the above table was given in some detail back on the first NASA web page you visited. A section of those data is presented herein starting on the next page.

Interpreting the Data

The text-based listing is in a column format, an example is as follows:

SATELLITE	LOCAL DATE/TIME	DURATION (MIN)	MAX ELEV (DEG)	APPROACH (DEG-DIR)	DEPARTURE (DEG-DIR)
ISS	Tue Nov 14/06:22 AM	4	66	10 above WSW	31 above NE

The left column is the satellite of interest. The next column presents the local date and time. The third column gives the duration, or the length of time in minutes the spacecraft is expected to be visible, assuming a clear sky, clear view, etc. The fourth column gives the maximum elevation the vehicle will achieve above the horizon (90 degrees is directly overhead). The fifth column tells the direction and elevation at which the spacecraft will become visible initially. The sixth column gives the direction and elevation at which the spacecraft will disappear from view.

Viewing Tips

For best results, observers should look in the direction and at the elevation shown in the appearing column at the time listed. Because of the speed of the orbiting vehicles, telescopes are not practical. However, a good pair of field binoculars may reveal some detail of the structural shape of the spacecraft.

On a regular basis, the space shuttle must get rid of excess supply and waste water by dumping them individually or simultaneously overboard through water spray nozzles. Viewing the shuttle at these times through binoculars or a telescope can reveal an even more spectacular view of the spacecraft and the ice crystals that form as the water is sprayed overboard. Although you can sometime use a flight timeline to find out when scheduled dumps occur, your best bet is to monitor NASA TV. Then, check the sightings list to see if a sighting opportunity for the space station and a water dump overlap with respect to time and location of interest.

Shuttle/station docking missions provide an exciting opportunity to see a double pass. On the day or two immediately before docking and after undocking, the shuttle and station will appear to be chasing each other across the night sky.

They will follow the same flight path varying by only a few minutes. If the distance is close enough, they will actually appear in the sky at the same time!

Orientation Descriptors

The following spatial description of the viewing coordinate information was also pulled from the above referenced web site.

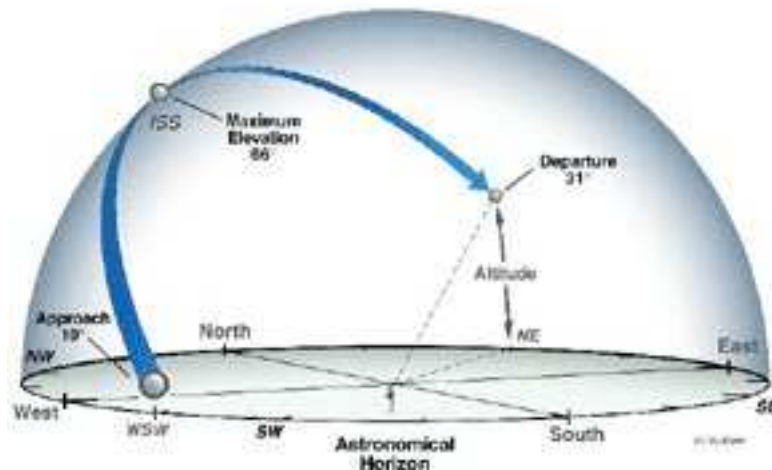


Figure 1.

As indicated in Figure 1 the space-station will come up in a WSW location and pass across the sky and fade out at some point in a general NE direction. If you have a lot of tall trees in your yard, as we do, then you might need a high elevation pass, and of course one of longer duration, in order to get a good view of the station. Also if you are fortunate and own a pair of astronomy type binoculars then you should be able to more clearly follow the space-station structure across the sky and actually observe some of its smaller structure components.

If the shuttle program gets into high gear and the International Space Station is completed, it has been noted that you will be able to observe the space station during daytime hours!

Some Concluding Remarks

Along the top of the first NASA web page referenced are several other options that one should consider.

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