

**From:** [James E Oberg](#)

**Sent:** Wednesday, September 21, 2011 2:37 PM

**Subject:** Falling NASA Satellite -- Updates, Talking Points, Links

Jim Oberg advises:

1. The 6-ton NASA satellite 'UARS'[Upper Atmosphere Research Satellite] is expected to hit the atmosphere and burn up [MOSTLY] sometime Friday evening EDT. Some pieces WILL reach the surface.

2a. Unlike most rocks from space that fall on our heads, this falling satellite is known in advance -- and it is that lengthy ANTICIPATION -- not the inherent hazard, that makes it so newsworthy. Bigger rocks fall to Earth much faster and every day -- all naturally, but out of sight, out of mind.

2b. But long-shot 'bad luck' DOES happen, and this photo shows a Chinese home smashed by a falling Chinese satellite in 2004. <http://www.jamesoberg.com/image/china-sat-penglai.jpg> Nobody was hurt, they say. Original links: <http://www.china.org.cn/images/103312.jpg> and [http://news.xinhuanet.com/english/2004-10/17/xinsrc\\_452100117213132711061.jpg](http://news.xinhuanet.com/english/2004-10/17/xinsrc_452100117213132711061.jpg)

3. I've already done two Skype-webcam hits for MSNBC, here are the youtube links:

Friday, <http://www.youtube.com/watch?v=tJf4yQtLsf8>

w/ Alex Witt, Sunday: <http://www.youtube.com/watch?v=kSb9D6MXcJw>

4. More MSNBC hits planned, and I'm standing by for coverage Thursday and Friday.

5a. First point to make -- it's not just drifting around aimlessly in space and suddenly drops randomly from the sky -- it is following a predictable path. Because of variations in air density, exactly where ALONG that path it will fall can't be known in advance.

5b. For some reason, the Russians think THEY can predict it, and have pinpointed the Coral Sea at 4:05 PM EDT Friday. I don't know WHAT they're smoking -- but I'll join their party if they turn out to be correct.

6. To see if you are on the endangered ground track, go to [www.heavens-above.com](http://www.heavens-above.com) [globe shows UARS position] and enter your location -- then select the "Satellites" option for "[UARS](#) - including daylight and invisible passes".

7. Here's mine for Houston:

Date	Mag	Starts			Max. <a href="#">altitude</a>			Ends		
		Time	Alt.	<a href="#">Az.</a>	Time	Alt.	Az.	Time	Alt.	Az.
21 Sep	2.8	05:36:59	10	NNE	05:38:04	13	NE	05:39:08	10	E
21 Sep	2.5	21:25:30	10	W	21:26:32	14	NW	21:27:35	10	NNW
22 Sep	2.9	05:11:22	10	NNE	05:11:58	11	NE	05:12:33	10	ENE
22 Sep	2.1	20:55:33	10	W	20:56:42	16	NW	20:57:51	10	N

8. This is only 48 hours in advance, so the actual burnup interval isn't yet covered -- but it's about the same time every night. I have a low-elevation pass (14 to 16 degrees above the north west horizon) about 9 PM and will have a similar one Friday night. So I will be outside with my videocamera hoping to get lucky.

9. That's right -- the closer it falls to me, the luckier I get, because it's the sky fireworks that I want to see.

10. IF your location has a pass with elevation above 80 degrees -- that is, nearly overhead -- then yes, YOU are in the potential debris scatter field.

11. So by tomorrow morning we'll have a better idea of the US cities under the ground tracks for the most likely entry interval.

12a. On contract to NASA, the Aerospace Corporation maintains a special 'Reentry News' website, with this chart of the UARS path: <http://reentrynews.aero.org/1991063b.html>

12b. Another helpful site is <http://www.spaceweather.com/>

12c. A discussion board on this subject for very well-informed spaceflight experts is here: <http://forum.nasaspaceflight.com/index.php?topic=26719.0>

13a. NASA's own UARS reentry page [pretty useless, IMHO]:

[http://www.nasa.gov/mission\\_pages/uars/index.html](http://www.nasa.gov/mission_pages/uars/index.html)

13b. A much, MUCH more useful NASA briefing is shown here:

[http://www.nasa.gov/pdf/585584main\\_UARS\\_Status.pdf](http://www.nasa.gov/pdf/585584main_UARS_Status.pdf)

14. Some background reading follows:

15. Funny stories about satellite junk that reaches the ground: Air & Space magazine: "Things That Fall to Earth" by Jim Oberg, (December 2004) [http://www.jamesoberg.com/fall\\_to\\_earth.pdf](http://www.jamesoberg.com/fall_to_earth.pdf)

16. Sometimes the junk is actually dropped off of the space station: Disposal of piano-sized 1400-lb space station piece poses challenges 11/20/2006 3:31:59 PM ET // Jim Oberg <http://www.msnbc.msn.com/id/15817106/>

17. Sometimes the junk is much more hazardous because of radioactive materials:

New Scientist -- 6 March 1999 - [Missing Plutonium from Mars-96](#)

[Probe http://www.jamesoberg.com/plutonium.html](http://www.jamesoberg.com/plutonium.html)

18. Aside from 'Skylab' and the shuttle 'Columbia', the most spectacular SECRET satellite fall was a Soviet space weapons platform in 1986: Russia's hundred-ton 'Polyus' battle-station:

<http://www.msnbc.msn.com/id/18620550/>

19. The hyper-hazardous falling satellite that required it be shot down -- the Pentagon's derelict spy satellite 'USA-193'. [http://www.jamesoberg.com/usa\\_193.html](http://www.jamesoberg.com/usa_193.html)

Further, in the 'New Atlantis' [Spring 2009] I criticized news media carelessness

on this theme: <http://www.thenewatlantis.com/publications/down-in-flames>

20. One last point -- overhyping the hazard can come back to bite us in years ahead when active measures begin to 'clean up' the space junk now in orbit. The first items that need removing are a few dozen 'hulks' of old boosters [mostly Russian] and similar satellites. They threaten all other satellites because if THEY are hit by even a much SMALLER piece of junk, they shatter into hundreds or THOUSANDS of pieces and the cloud then triggers more collisions -- a 'runaway' disintegration of objects. But the only practical way to clear them out of space is to -- hold onto your hat -- drop them into the atmosphere using small propulsive units.

21. Now look at UARS. It's already been hit once and shed a number of fragments, including one that threatened the space station not long ago. It is SAFER to get it out of orbit as soon as possible before that happens again, and that's what NASA did a few years ago when it lowered the satellite's orbit into thicker air.

22. But if suddenly there's elevated anxiety of the danger to people of doing this, to clear out 'space junk' from destroying too many satellites and making low Earth orbit too hazardous for human space flight for decades -- you can imagine the outcry about threats to human life on Earth [and the environmental impact lawsuits] that could get in the way of measures for cleaning up the mess we've already made in space.

ADD: Sent: Thursday, September 22, 2011 12:09 AM

Subject: Man Killed By Falling Satellite -- in "Northern Exposure" episode

If anybody is looking for humorous video portrayals of hazards of falling satellites, I suggest the episode of 'Northern Exposure' where Maggie O'Connell's boyfriend Rick is hit directly by a falling satellite that fuses with his body -- so they have to be buried together.

All right, all right, maybe it's not so funny after all, but a little whimsical, for sure.

It's the episode "Slow Dance", first aired May 20, 1991 -- season 2- episode 07 (15th in series)