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# 1982- 33A Salyut 7

Patrick Schmeer e-mails:

"This Soviet space station was launched on 1982 April 19 with a Proton rocket from the cosmodrome Baikonur near Tyuratam

(Kazakhstan). Salyut 7 is part A= (main) payload of the 33rd satellite launch in the year 1982.

The decay of Salyut 7 is predicted for early February 1991. The space station (maximum brightness about mag -2!) is currently undergoing its last evening visibility.

In the following table there are given in steps of 30 seconds the sub-satellite point (eastern longitude and northern latitude) and the elevation of the sun as seen from the satellite. (If the latter value is below zero the satellite is in Earth's shadow.) The time given in UT corresponds to the first position.

From 1991 January 11 to 20 the altitude will decrease from 270 km to 257 km and the orbital period from 89.80 min to 89.54 min.

Date (Jan)

12, 16:35:30 UT	-3.7	+45.9	+18.3/	-1.2	+46.8	+16.3/	+1.3	+47.6	+14.3
	+4.0	+48.4	+12.3/	+6.7	+49.1	+10.3/	+9.5	+49.7	+8.3
13, 16:32:30 UT	-4.7	+47.4	+18.6/	-2.1	+48.2	+16.6/	+0.6	+48.9	+14.7
	+3.4	+49.6	+12.7/	+6.2	+50.2	+10.7/	-9.1	+50.6	+ 8.8
13, 18:06:30 UT	-3.1	+51.7	+ 2.1/	+0.0	+51.8	+ 0.1			
14, 16:29:30 UT	-2.9	+49.4	+17.0/	+0.0	+49.9	+15.1/	+2.9	+50.5	+13.2
	+5.8	+50.9	+11.3/	+8.8	+51.2	+ 9.3			
14, 18:03:00 UT	-3.0	+51.8	+ 2.7/	-0.1	+51.7	+ 0.8/	+3.2	+51.6	- 1.1
15, 16:25:30 UT	-3.5	+50.3	+17.6/	-0.6	+50.7	+15.7/	+2.4	+51.1	+13.8
	+5.4	+51.4	+11.9/	+8.5	+51.6	+10.1			
15, 17:59:00 UT	-3.1	+51.7	+ 3.5/	-0.0	+51.5	+ 1.7/	+3.0	+51.2	- 0.2
16, 16:21:00 UT	-4.2	+50.9	+18.2/	-1.2	+51.3	+16.4/	+1.9	+51.5	+14.6
	+4.9	+51.7	+12.8/	+8.0	+51.8	+11.0			
16, 17:54:30 UT	-3.4	+51.3	+ 4.6/	-0.4	+51.0	+ 2.8/	+2.6	+50.6	+ 1.1
	+5.5	+51.5	- 0.7						
17, 16:16:00 UT	-4.9	+51.4	+19.1/	-1.8	+51.6	+17.4/	+1.3	+51.7	+15.6
	+4.4	+51.8	+13.9/	+7.5	+51.8	+12.2			
17, 17:49:30 UT	-3.9	+50.8	+ 6.0/	-1.0	+50.4	+ 4.3/	+1.9	+49.8	+ 2.6
	+4.7	+49.2	+ 0.9/	+7.5	+48.4	- 0.8			
18, 17:44:00 UT	-4.7	+50.2	+ 7.8/	-1.8	+49.6	+ 6.1/	+1.0	+50.0	+ 4.5
	+3.7	+48.3	+ 2.9/	+6.3	+47.5	+ 1.3/	+8.9	+46.7	- 0.3
19, 17:38:30 UT	-2.9	+48.8	+ 8.1/	-0.2	+48.0	+ 6.6/	+2.4	+47.3	+ 5.1
	+4.9	+46.4	+ 3.7/	+7.3	+45.3	+ 2.2/	+9.7	+44.5	+ 0.7
20, 17:32:00 UT	-4.3	+47.9	+10.5/	-1.7	+47.1	+ 9.1/	+0.8	+46.2	+ 7.7
	+3.2	+45.3	+ 6.4/	+5.6	+44.3	+ 5.0/	+7.8	+43.3	+ 3.6

I computed the above predictions using the following Two-Line orbital elements received from NASA:

Epoch 1991-003.62707863 (= 1991 Jan. 3, 15h03m00s UTC)

n-dot/2 0.00256473 rev/day/day

Incl. 51.5948 deg

R.A. 351.0539 deg (R.A. of ascending node)

Ecc. 0.0003128

Perigee 54.5197 deg

Mean An 305.1492 deg (Mean anomaly at epoch given above)

n 15.98287141 (number of revolutions per day, perigee-perigee)

This month I made the following visual observations of Salyut 7 from Saarbruecken-Bischmisheim, Germany:

Jan. 8, 16h45m UT: mag +2: (low in the south east)

Jan. 9, 16h44m UT: mag +1 (quite low in the south east)"

Guy M Hurst