Name of Satellite
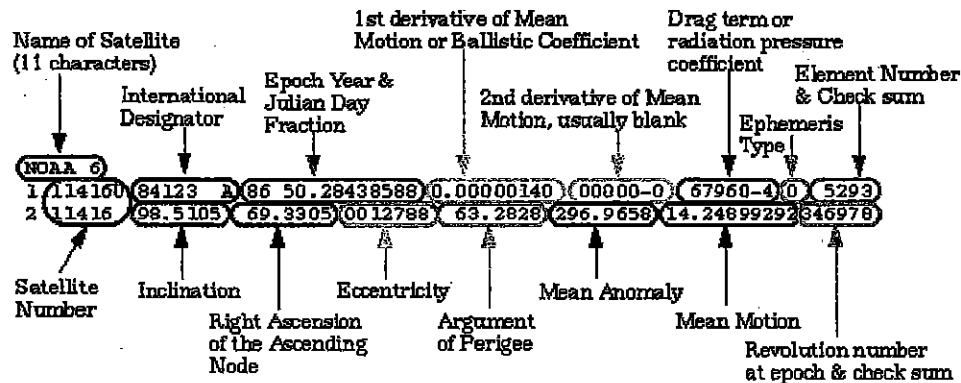
(NOAA 6) This is simply the name associated with the satellite. Typical names you might be interested in might be "Mir" or "ISS".

International Designator

(84 123A) The 84 indicates launch year was in 1984, while the 123 tallies the 124th launch of the year, and "A" shows it was the first object resulting from this launch.

Epoch Date and Julian Date Fraction

The Julian day fraction is just the number of days passed in the particular year. For example, the date above shows "86" as the epoch year (1986) and 50.28438588 as the Julian day fraction meaning a little over 50 days after January 1, 1986. The resulting time of the vector would be **1986/050:06:49:30.94**.

This was computed as follows:

Start with 50.28438588 days (Days = 50)
50.28438588 days - 50 = 0.28438588 days
0.28438588 days x 24 hours/day = 6.8253 hours (Hours = 6)
6.8253 hours - 6 = 0.8253 hours
0.8253 hours x 60 minutes/hour = 49.5157 minutes (Minutes = 49)
49.5157 - 49 = 0.5157 minutes
0.5157 minutes x 60 seconds/minute = 30.94 seconds (Seconds = 30.94)

Ballistic Coefficient

(0.00000140) Also called the first derivative of mean motion, the ballistic coefficient is the daily rate of change in the number of revs the object completes each day, divided by 2. Units are revs/day. This is "catch all" drag term used in the Simplified General Perturbations (SGP4) USSPACECOM predictor.

Second Derivative of Mean Motion

(00000-0 = 0.00000) The second derivative of mean motion is a second order drag term in the SGP4 predictor used to model terminal orbit decay. It measures the second time derivative in daily mean motion, divided by 6. Units are revs/day^3. A leading decimal must be applied to this value. The last two characters define an applicable power of 10. (12345-5 = 0.0000012345).

Drag Term

(67960-4 = 0.000067960) Also called the radiation pressure coefficient (or BSTAR), the parameter is another drag term in the SGP4 predictor. Units are earth radii^-1. The last two characters define an applicable power of 10. Do not confuse this parameter with "B-Term", the USSPACECOM special perturbations factor of drag coefficient, multiplied by reference area, divided by weight.

Element Set Number and Check Sum

(5293) The element set number is a running count of all 2 line element sets generated by USSPACECOM for this object (in this example, 529). Since multiple agencies perform this function, numbers are skipped on occasion to avoid ambiguities. The counter should always increase with time until it exceeds 999, when it reverts to 1. The last number of the line is the check sum of line 1.

Satellite Number

(11416) This is the catalog number USSPACECOM has designated for this object. A "U" indicates an unclassified object.

Inclination (degrees)

The angle between the equator and the orbit plane. The value provided is the TEME mean inclination.

Right Ascension of the Ascending Node (degrees)

The angle between vernal equinox and the point where the orbit crosses the equatorial plane (going north). The value provided is the TEME mean right ascension of the ascending node.

Eccentricity

(0012788) A constant defining the shape of the orbit (0=circular, Less than 1=elliptical). The value provided is the mean eccentricity. A leading decimal must be applied to this value.

Argument of Perigee (degrees)

The angle between the ascending node and the orbit's point of closest approach to the earth (perigee). The value provided is the TEME mean argument of perigee.

Mean Anomaly (degrees)

The angle, measured from perigee, of the satellite location in the orbit referenced to a circular orbit with radius equal to the semi-major axis.

Mean Motion

(14.24899292) The value is the mean number of orbits per day the object completes. There are 8 digits after the decimal, leaving no trailing space(s) when the following element exceeds 9999.

Revolution Number and Check Sum

(346978) The orbit number at Epoch Time. This time is chosen very near the time of true ascending node passage as a matter of routine. The last digit is the check sum for line 2.