

NORAD Two-Line Element Set Format

Data for each satellite consists of three lines in the following format:

AAAAAAAAAAAAAAAAAAAAAAAAAAAA

1 NNNNNNU NNNNNNAAA NNNNN.NNNNNNNNN +.NNNNNNNNN +NNNNN-N +NNNNN-N N NNNNN

2 NNNNN NNN.NNNN NNN.NNNN NNNNNNNN NNN.NNNN NNN.NNNN NN.NNNNNNNNNNNNNNN

Line 0 is a twenty-four character name (to be consistent with the name length in the NORAD SATCAT).

Lines 1 and 2 are the standard Two-Line Orbital Element Set Format identical to that used by NORAD and NASA. The format description is:

Line1

Column	Description
01	Line Number of Element Data
03-07	Satellite Number
08	Classification (U=Unclassified)
10-11	International Designator (Last two digits of launch year)
12-14	International Designator (Launch number of the year)
15-17	International Designator (Piece of the launch)
19-20	Epoch Year (Last two digits of year)
21-32	Epoch (Day of the year and fractional portion of the day)
34-43	First Time Derivative of the Mean Motion
45-52	Second Time Derivative of Mean Motion (decimal point assumed)
54-61	BSTAR drag term (decimal point assumed)
63	Ephemeris type
65-68	Element number
69	Checksum (Modulo 10)(Letters, blanks, periods, plus signs = 0; minus signs = 1)

Line2

Column	Description
01	Line Number of Element Data
03-07	Satellite Number
09-16	Inclination [Degrees]
18-25	Right Ascension of the Ascending Node [Degrees]
27-33	Eccentricity (decimal point assumed)
35-42	Argument of Perigee [Degrees]
44-51	Mean Anomaly [Degrees]
53-63	Mean Motion [Revs per day]
64-68	Revolution number at epoch [Revs]
69	Checksum (Modulo 10)

All other columns are blank or fixed.

Example:

DFH-1

1 4382U 70034A 19282.73371366 -.00000113 00000-0 -29869-5 0 9995

2 4382 68.4227 330.3073 1050303 5.9123 355.3249 13.07814596325778