

Space Track

The Source for Space Surveillance Data

A Basic Description of the Two Line Element (TLE) Format.

In supported browsers, simply hovering your mouse pointer over a field in the sample TLE below will pop up a tool-tip style description of the field. Every field is also a hyperlink to the description table below.

ISS (ZARYA)

```
1 25544U 98067A 04236.56031392 .00020137 00000-0 16538-3 0 5135
2 25544 51.6335 341.7760 0007976 126.2523 325.9359 15.70406856328903
```

123456789012345678901234567890123456789012345678901234567890 reference number line
 1 2 3 4 5 6 7

Line 0		
Columns	Example	Description
1-24	ISS (ZARYA)	The common name for the object based on information from the SatCat. Search by Common Name
Line 1		
Columns	Example	Description
1	1	Line Number
3-7	25544	Object Identification Number Search by object ID
8	U	Elset Classification
10-17	98067A	International Designator Search by International Designator
19-32	04236.56031392	Element Set Epoch (UTC)
34-43	.00020137	1st Derivative of the Mean Motion with respect to Time
45-52	00000-0	2nd Derivative of the Mean Motion with respect to Time (decimal point assumed)
54-61	16538-3	B* Drag Term
63	0	Element Set Type
65-68	513	Element Number
69	5	Checksum

Line 2		
Columns	Example	Description
1	2	Line Number
3-7	25544	Object Identification Number
9-16	51.6335	Orbit Inclination (degrees)
18-25	344.7760	Right Ascension of Ascending Node (degrees)
27-33	0007976	Eccentricity (decimal point assumed)
35-42	126.2523	Argument of Perigee (degrees)
44-51	325.9359	Mean Anomaly (degrees)
53-63	15.70406856	Mean Motion (revolutions/day)
64-68	32890	Revolution Number at Epoch
69	3	Checksum

More Information

Object Identification Number

The catalog number assigned to the object by the US Air Force. The numbers are assigned sequentially as objects are cataloged. This is the most common way to [search](#) for TLE data on this site.

Object numbers less than 10000 are always aligned to the right, and padded with zeros or spaces to the left.

Classification

The security classification of the element set. All objects on this site will have a classification of 'U' (unclassified).

International Designator

98067A

This is another format for identifying an object.

- The first two characters designate the launch year of the object.
- The next 3 characters indicate the launch number, starting from the beginning of the year. This particular launch was the 67th launch of 1998.
- The remainder of the field (1 to 3 characters) indicates the piece of the launch. Piece 'A' is usually the payload.

Element Set Epoch

04236.56031392

- The first two digits ('04') indicate the year. Add 1900 for years ≥ 57 , and 2000 for all others.
- The remainder of the field ('236.56031392') is the day of the year.

Checksum

The checksum is the sum of all of the character in the data line, modulo 10. In this formula, the following non-numeric characters are assigned the indicated values:

- Blanks, periods, letters, '+' signs -> 0
- '-' signs -> 1

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