NAME

azel − satellite predictions

SYNOPSIS

/usr/games/azel [**−d**] [**−l**] satellite1 [**−d**] [**−l**] satellite2 ...

DESCRIPTION

Azel predicts, in convenient form, the apparent trajectories of Earth satellites whose orbital elements are given in the argument files. If a given satellite name cannot be read, an attempt is made to find it in a directory of satellites maintained by the program's author. The**−d** option causes *azel* to ask for a date and read line 1 data (see below) from the standard input. The **−l** option causes *azel* to ask for the observer's latitude, west-longitude, and height above sea level.

For each satellite given the program types its full name, the date, and a sequence of lines each containing a time, an azimuth, an elevation, a distance, and a visual magnitude. Each such line indicates that: at the indicated time, the satellite may be seen from Murray Hill (or provided location) at the indicated azimuth and elevation, and that its distance and apparent magnitude are as given. Predictions are printed only when the sky is dark (sun more than 5 degrees below the horizon) and when the satellite is not eclipsed by the earth's shadow. Satellites which have not been seen and verified will not have had their visual magnitude level set correctly. All times input and output by*azel* are GMT (Uni versal Time). The satellites for which elements are maintained are:

sla,b,e,f,k Skylab A through Skylab K. Skylab A is the laboratory; B was the rocket but it has crashed. A and probably K have been verified.

cop Copernicus I. Never verified.

oao Orbiting Astronomical Observatory. Seen and verified.

pag Pageos I. Seen and verified; fairly dim (typically 2nd-3rd magnitude), but elements are extremely accurate.

exp19 Explorer 19; seen and verified, but quite dim (4th-5th magnitude) and fast-moving.

c103b, c156b, c184b, c206b, c220b, c461b, c500b
Various of the USSR Cosmos series; none seen.

7276a Unnamed (satellite # 72-76A); not seen.

The element files used by *azel* contain 5 lines. The first line gives a year, month, day, hour, and minute at which the program begins its consideration of the satellite, followed by a number of minutes and an interval in minutes. If the year, month, and day are 0, they are taken to be the current date (taken to change at 6 A.M. local time). The output report starts at the indicated epoch and prints the position of the satellite for the indicated number of minutes at times separated by the indicated interval. This line is ended by 2 numbers that specify options to the program governing the completeness of the report; they are ordinarily both '1'; the first suppresses output when the sky is not dark; the second suppresses output when the satellite is eclipsed by the earth's shadow. The next line of an element file is the full name of the satellite. The next 3 are the elements themselves (including certain derivatives of the elements).

FILES

/usr/jfo/* − orbital element files

SEE ALSO

sky(VI)