Table 2

Satellite Status and Operational Frequencies MHz

Satellite	Uplink	Downlink	Beacons	Notes
OSCAR 8 Mode A	145.85-145.95	29.4-29.5	29.402	
OSCAR 8 Mode J	145.9-146.00	435.1-435.2	435.095	Inverting transponder *
OSCAR 9 (UOSAT)			145.825	Experimental beacons on
			435.025	7.05-14.002-21.002-29.510
				also 2.401-10.47 GHz
RS-3			29.231/401	
RS-4			29.360/403	
RS-5	145.91-145.95	29.41-29.45	29.331/452	Robot Uplink 145.826
RS-6	145.91-145.95	29.41-29.45	29.411/453	(downlink 29.331)
RS-7	145.96-146.0	29.46-29.50	29.341/501	Robot Uplink 145.836
RS-8	145.96-146.0	29.46-29.50	29.461/502	(downlink 29.341)

* Inverting transponder where the pass band becomes inverted, HF becomes LF USB becomes LSB etc. This applies to all future amateur space craft.

the earth you would see it come from behind the earth over the Antartic region procede northwards across the equator, then disappear over the north polar region. This part of the orbit is known as the 'ascending node'. The remaining half of the orbit, when the satellite travels from north to south, is called 'the descending node'.

An orbit commences when a satellite crosses the equator travelling north; and all current orbital predictions relate to this time in universal clock time (UCT) = (GMT) = (Z) and the degrees west of the Greenwich meridian where it occurs. It is possible that orbital predictions for the phase 3 (highly elliptic orbit) satellites will operate to a different theme; an orbit will commence when the satellite passes perigee (lowest altitude possible) and the predictions will be based upon that point in time and position.

The 'degrees west' method of stating longtitude often confuses those who are more used to working in degrees east and west. To explain, up to 180° W the numbers are the same, after that another 10° in the same direction would bring the longtitude to 170° East by normal standards, but to 190° W in the parlance of the amateur satellite world. 160° E equates to 200° W and so on round to the Greenwich meridian again, hence 5°E = 355°W...See **fig. 3**

ORIBITAL DETAILS

The orbit of OSCAR 8 is fairly stable so it's possible to issue accurate predictions of the time of equatorial crossings and corresponding longtitudes of every orbit for several months ahead.

Probably the best known of these predictions is the calendar which is available through AMSAT-UK (c/o G3AAJ) 94 Herongate Rd., Wanstead Park, London E12 5EQ. Alternatively predictions for the week ahead are available on telex or from the news bulletins over GB2RS and all AMSAT and AMSAT-UK nets.

The first orbit of the day is called the 'reference' orbit and will obviously occur in the first period of the day, these are usually out of range from the UK. The data given in **Table 3** will enable future orbits to be calculated with great accuracy, given any reference orbit information.

Having determined the basic data for an orbit, this has turned into beam headings, Acquisition (AOS) and Loss (LOS) of signal times for your particular location. These are calculated from computer programmes 'look-up' tables and tracking maps.

RECEIVING SATELLITE SIGNALS

Reception on the 10 meters from OSCAR-8 and RS satellites differs from normal reception in that it's basically line of sight and it is usually necessary to be able to receive the satellite's signals while your transmitter is actually 'on the air'. As the satellite's power is

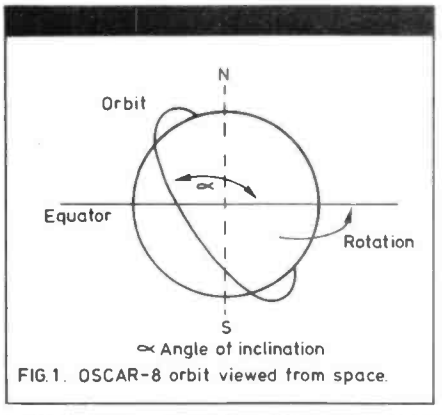

FIG.1. OSCAR-8 orbit viewed from space.

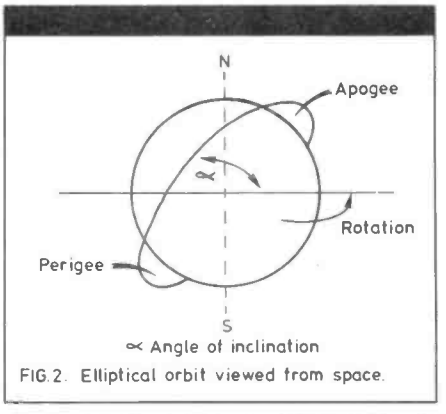

FIG.2. Elliptical orbit viewed from space.

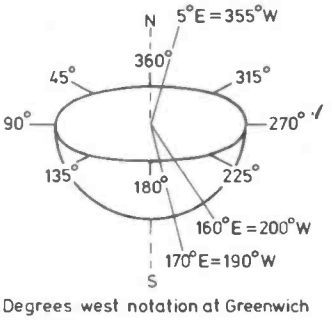

FIG.3. Degrees west notation at Greenwich meridian