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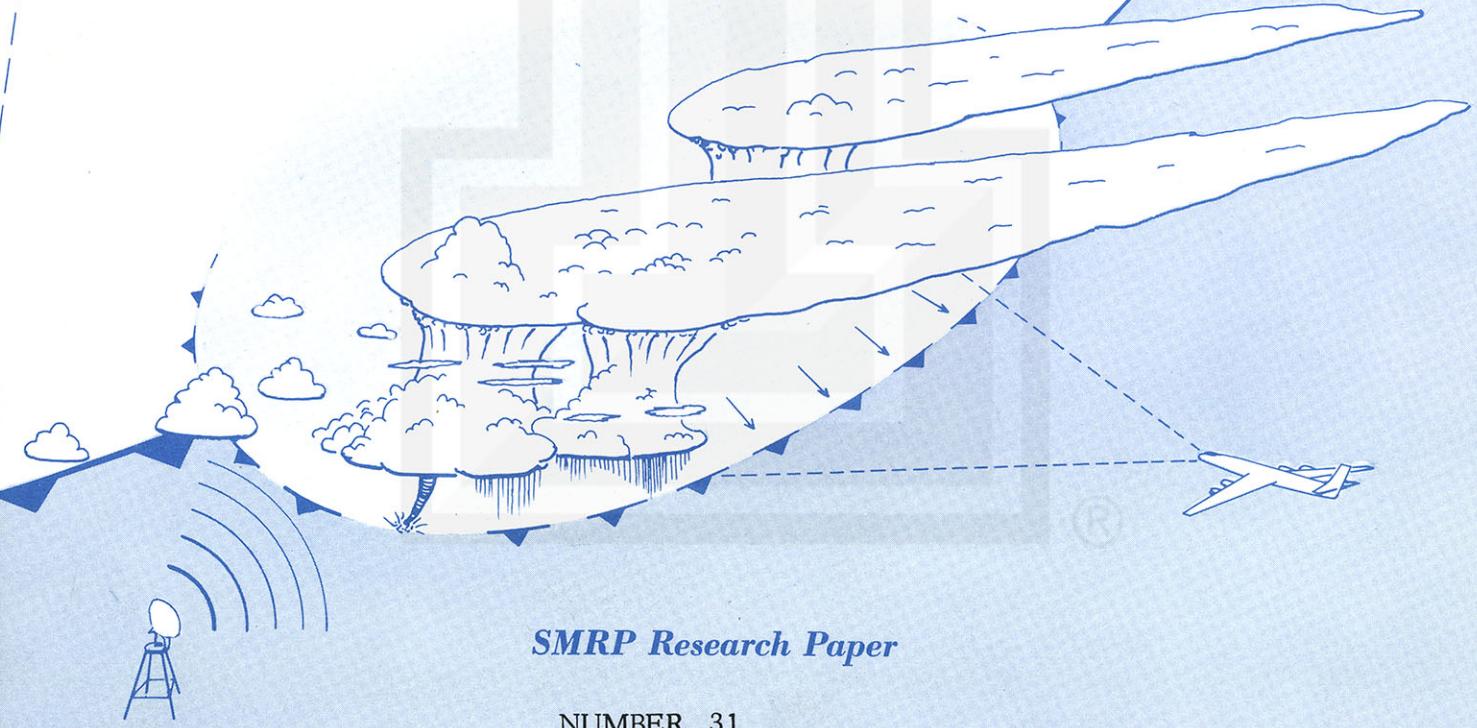
# SATELLITE & MESOMETEOROLOGY RESEARCH PROJECT

*Department of the Geophysical Sciences  
The University of Chicago*

## TABLES OF SCAN NADIR AND HORIZONTAL ANGLES

by

William D. Bonner



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## ABSTRACT

Tables are presented which may be used in place of the tilt and radiometer grids in the Fujita technique for the analysis of satellite radiation data. Scan geometry is briefly described and an example is given showing the use of the tables in plotting a scan line on an OEC projection.

### 1. Introduction

Fujita<sup>1</sup> has developed a graphical technique for plotting the scan lines from satellite-born scanning radiometers. This technique, applied to analog traces from TIROS master telemetry tapes, permits a synoptic analysis of the radiation data with a resolution limited only by the resolution of the sensor and telemetric system of the satellite.

The purely graphical technique, while valuable for mesoscale research, is both tedious and time-consuming and, for this reason, Fujita, Arnold, and Bonner at SMRP have worked to develop faster ways of locating the scan lines without significantly reducing their accuracy. These include:

A. The use of tables to replace the tilt and radiometer grids in the graphical technique.

B. The development of a set of pre-plotted scan lines which can be traced directly onto an OEC chart.

C. The writing of a program for machine calculation of scan-spot latitude and longitude from subpoint and attitude information.

Techniques B and C above will be discussed in later reports;<sup>2</sup> this report presents machine-calculated tables which may replace the tilt and radiometer grids in the plotting of TIROS and NIMBUS scan lines. Three sets of tables are given: for  $\beta$  angles of 45, 70, and 90 deg corresponding respectively to the design inclinations of the radiometer axes in previous TIROS, in a proposed TIROS, and in NIMBUS satellites.

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<sup>1</sup>

Fujita, T., 1963: Outline of a theory and examples for precise analysis of satellite radiation data. Mesomet. Res. Paper #15, Chicago Univ. Fujita, T., 1964: A technique for precise analysis of satellite data: Vol. II, Radiation analysis, section 6. Fixed-position scanning. SMRP Res. Paper #29, Chicago Univ.

<sup>2</sup>

Scan-line grids will be described in SMRP Res. Paper #32, the computer program in SMRP Res. Paper #42 - both to be published during 1964.

## 2. Mathematics

For a comprehensive discussion of scan geometry and for clarification of the terms used below, see the second paper by Fujita listed in footnote 1.

If the orbital motion of a satellite is ignored during a single rotation of its radiometer axis, the geometry of the scan becomes relatively simple. As shown in Fig. 1, the radiometer axis sweeps out a cone in space with half-vertex angle  $\beta$  and with the axis of the cone inclined at an angle  $\eta_a$  from the vertical. The intersection of the cone with the earth is the terrestrial scan line. Any point TSC on the scan line may be located by its coordinates  $\eta_*$  and  $\psi_*$ , the scan nadir angle and scan horizontal angle respectively. Given the satellite position and attitude, these coordinates may be transformed either graphically or mathematically to latitude and longitude on the earth.

If  $\beta$  and  $\eta_a$  are known,  $\eta_*$  and  $\psi_*$  corresponding to a particular scan angle  $\sigma$  are obtained by solving the spherical triangle formed by the projections of TSP, TPM, and TSConto an arbitrary sphere centered at the satellite (see Figs. 1 and 2). Referring to Fig. 2,

$$\cos \eta_* = \cos \beta \cos \eta_a - \sin \beta \sin \eta_a \cos \sigma \quad (1)$$

and

$$\sin \psi_* = \sin \beta \sin \sigma / \sin \eta_* \quad (2)$$

where  $\psi_*$  and  $\sigma$  are measured from the primary plane. The angle  $\sigma$  by convention is 0 deg at apogee and, for the floor sensor on TIROS satellites, is measured in a counterclockwise direction from the primary line.

If the angle ( $\beta + \eta_a$ ) exceeds the complement of the dip angle ( $\delta_H$ ), the radiometer will be viewing space during at least a portion of the scan. It would be possible to interpolate  $\sigma$  and  $\psi_*$  at the horizon from the condition that  $\eta_* = 90 - \delta_H$ ; however, accurate interpolation is difficult in this case and, instead, separate tables were computed giving  $\sigma$  and  $\psi_*$  at the horizon as a function of  $\delta_H$  and  $\eta_a$ . The horizon tables were produced by solving equations (1) and (2) for  $\sigma$  and  $\psi_*$  with  $\eta_*$  replaced by  $(90 - \delta_H)$ .

The programs for producing the tables were written with  $\beta$  and with the range and increment of  $\delta_H$  as input data rather than as constants in the program so that tables can be quickly and easily produced for a wide variety of satellite-radiometer systems.

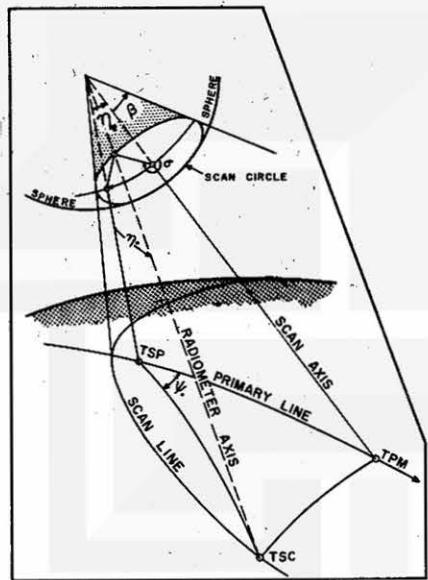


Fig. 1. Scan geometry showing the projection of TSP, TPM and an arbitrary scan point TSC onto the surface of a sphere centered at the satellite. Given the position of the satellite, the nadir angle  $\eta_a$  and horizontal angle  $\psi$  define the location of TSC.

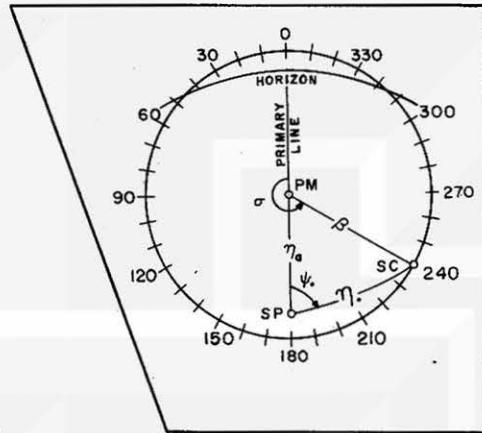


Fig. 2. View from the satellite of the spherical triangle formed by the projection of TSP, TPM, and TSC onto the sphere in Fig. 1. Note horizon intersections with the scan circle and the symmetry about the primary line. As drawn, the axis of the floor sensor of TIROS satellite would first intersect the earth at  $\sigma = 45$  deg and would leave the earth at  $\sigma = 315$  deg. Coordinates  $(\eta_a, \psi)$  of points in between are obtained by solving the spherical triangle (equations 1 and 2).

### 3. Using the Tables

The plotting of a scan line on an OEC chart is illustrated in Fig. 3. The example refers to TIROS with  $\beta = 45$  deg,  $\eta_a \equiv \eta_s = 38.5$  deg. The altitude of the satellite is assumed to be 730 km.

The subpoint and primary line must be drawn on the OEC chart in order to properly orient the height grid underlay. Subpoint positions and satellite altitudes may be obtained from the Definitive AT Map produced by NASA. Spin axis points may be obtained from photo analysis<sup>3</sup> or from tables or graphs giving celestial coordinates of

<sup>3</sup> Fujita, T., 1963: A technique for precise analysis of satellite data: Volume I - photogrammetry. MSL Rep. #14, U.S. Wea. Bur.

the spin-axis point as a function of time.<sup>3,4</sup> The primary line and the satellite nadir angle are determined by constructing the great circle connecting the spin axis point and the subpoint, as described by Fujita.<sup>3</sup>

In the example, a ZE height grid is centered at the subpoint on the OEC chart with its axis along the primary line. The dip angle is a function of height alone and may be obtained from the nomogram in Fig. 4. In this case,  $\delta_H$  is approximately 26.25 deg and, therefore, using the table on page 11, the first horizon intersection of the radiometer axis occurs at  $\sigma = 75.4$  deg with  $\psi_* = 49.7$  deg, giving the first point of the scan line in Fig. 3. Since the geometry is symmetrical about the primary line, the radiometer axis will leave the earth at  $360 - \sigma$  or 284.6 deg and with  $\psi_* = 49.7$  deg measured in the opposite direction from the primary line, giving the second horizon in Fig. 3. Height grid coordinates for  $\sigma = 180$  deg to  $\sigma = 80$  deg are obtained from the tables on page 10. These points, together with their image points on the opposite side of the primary line, are plotted and connected together by a smooth curve to yield the scan line in Fig. 3.

If the satellite nadir angle is sufficiently large

$$\beta + \eta_s > 90 + \delta_H$$

the wall sensor on TIROS will view the earth either alone or in alternation with the floor sensor. The tables may be used for plotting the scan lines of the wall sensor provided that  $\eta_a$  is replaced by  $180 - \eta_s$ . In this case, the rotation of the radiometer axis is in a clockwise rather than a counterclockwise sense.

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<sup>4</sup> Goldshlak, L., 1962: TIROS III and IV attitude summaries. ARACON Geophysics Corp., Concord, Mass.

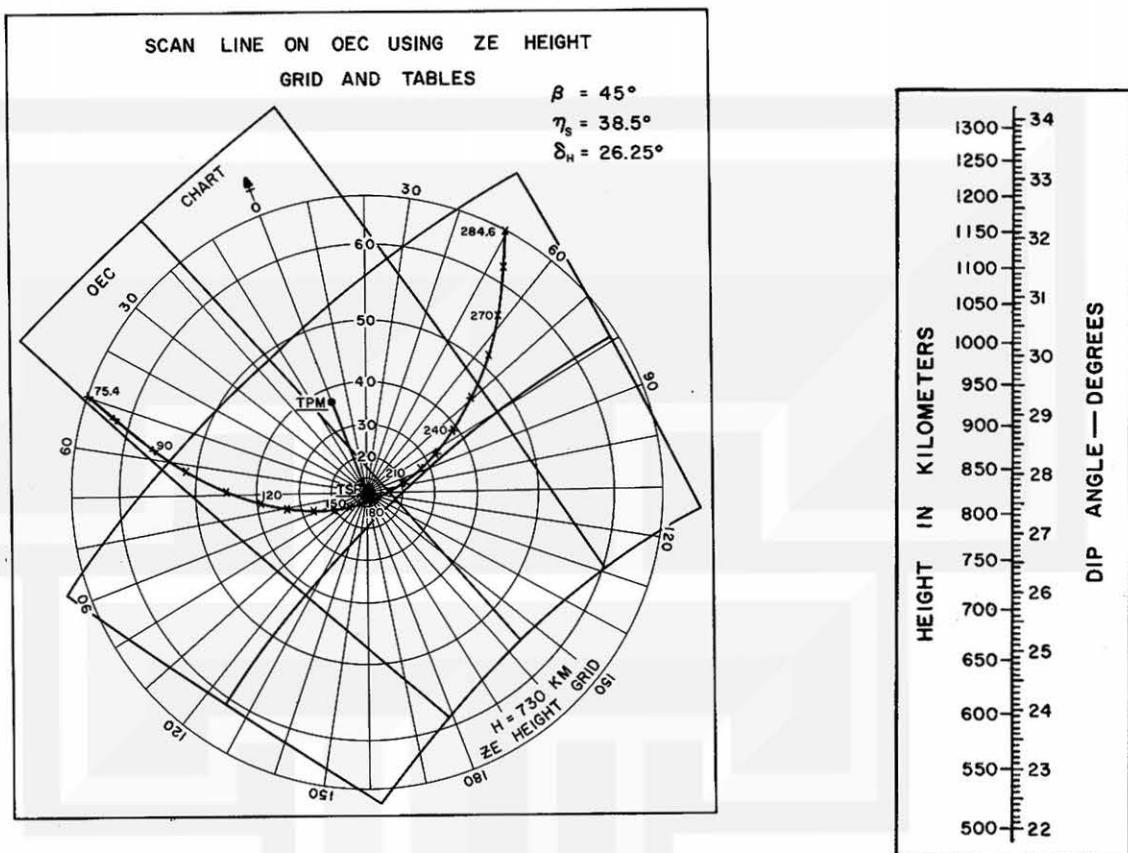


Fig. 3. Schematic illustration showing scan line plot on OEC using a ZE height grid and tables. Note the symmetry about the primary line and the proper orientation of the height grid on the OEC. The plotted positions of the scan spots on the height grid were taken from the tables on pages 10 and 11.

Fig. 4. Nomogram for conversion of altitude in km to dip angle in deg.

#### 4. Tables of Scan Nadir and Horizontal Angles

Nadir and azimuth angles of 10-deg scan spots are listed on the left hand pages as a function of the nadir angle of the radiometer axis,  $\eta_a$ . The spin angle is 180 deg at aponadir and 0 deg at perinadir. Tables of spin angle and scan-horizontal angle at the horizon are given on facing pages for the same range of  $\eta_a$  at 0.25-deg increments of dip. See Fig. 4 for conversion of satellite height to dip angle.

Zeros fill in the horizon tables where there is no horizon intersection (closed or null modes). Tables of nadir and horizontal angles are cut off with the first value of  $\eta_a$  exceeding 70 deg and succeeding row entries are 0.

Table I  
 $\beta = 45 \text{ deg}$

## SCAN NAEIR ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) FOR BETA=45.0CEG

	180	170	160	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10	C
0.	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
	180.0	170.0	160.0	150.0	140.0	130.0	120.0	110.0	100.0	90.0	80.0	70.0	60.0	50.0	40.0	30.0	20.0	10.0	C.
0.5	44.5	44.5	44.5	44.6	44.6	44.7	44.8	44.8	44.9	45.0	45.1	45.2	45.3	45.3	45.4	45.4	45.5	45.5	45.5
	180.0	169.9	159.8	149.7	139.7	129.7	129.6	119.6	109.5	99.5	89.5	79.5	69.5	59.6	49.6	39.7	29.8	19.8	9.9
1.0	44.0	44.0	44.1	44.1	44.2	44.4	44.5	44.7	44.8	45.0	45.2	45.3	45.5	45.6	45.8	45.9	45.9	46.0	46.0
	180.0	169.8	159.6	149.5	139.3	129.2	119.1	109.1	99.0	89.0	79.0	69.1	59.1	49.2	39.4	29.5	19.7	9.8	0.
1.5	43.5	43.5	43.6	43.7	43.9	44.0	44.3	44.5	44.8	45.0	45.3	45.5	45.8	46.0	46.2	46.3	46.4	46.5	46.5
	180.0	169.7	159.5	149.5	139.2	129.8	118.7	108.6	98.5	88.5	78.5	68.6	58.7	48.9	39.1	29.3	19.5	9.7	C.
2.0	43.0	43.0	43.1	43.3	43.5	43.7	44.0	44.3	44.7	45.0	45.4	45.7	46.0	46.3	46.5	46.7	46.9	47.0	47.0
	180.0	169.6	159.3	149.0	138.7	128.4	118.2	108.1	98.0	88.0	78.0	68.2	58.3	48.5	38.8	29.0	19.3	9.7	0.
2.5	42.5	42.5	42.7	42.8	43.1	43.4	43.8	44.2	44.6	45.1	45.5	45.9	46.3	46.6	46.9	47.2	47.4	47.5	47.5
	180.0	169.5	159.1	148.7	138.3	128.0	117.8	107.6	97.5	87.5	77.6	67.7	57.9	48.2	38.5	28.8	19.2	9.6	0.
3.0	42.0	42.0	42.2	42.4	42.7	43.1	43.6	44.0	44.6	45.1	45.6	46.1	46.6	47.0	47.3	47.6	47.8	48.0	48.0
	180.0	169.4	158.9	148.4	138.0	127.6	117.3	107.1	97.0	87.0	77.1	67.3	57.5	47.8	38.2	28.6	19.0	9.5	C.
3.5	41.5	41.6	41.7	42.0	42.4	42.8	43.3	43.9	44.5	45.1	45.7	46.3	46.8	47.3	47.7	48.1	48.3	48.4	48.5
	180.0	169.3	158.7	148.1	137.6	127.2	116.8	106.6	96.5	86.5	76.6	66.8	57.1	47.5	37.9	28.4	18.9	9.4	C.
4.0	41.0	41.1	41.3	41.6	42.0	42.5	43.1	43.8	44.4	45.1	45.8	46.5	47.1	47.6	48.1	48.5	48.8	48.9	49.0
	180.0	169.2	158.5	147.8	137.2	126.7	116.4	106.1	96.0	86.0	76.1	66.4	56.7	47.1	37.6	28.2	18.8	9.4	0.
4.5	40.5	40.6	40.8	41.2	41.6	42.2	42.9	43.6	44.4	45.2	45.9	46.7	47.4	48.0	48.5	48.9	49.2	49.4	49.5
	180.0	169.1	158.3	147.5	136.8	126.3	115.9	105.6	95.5	85.5	75.7	65.9	56.3	46.8	37.4	28.0	18.6	9.3	0.
5.0	40.0	40.1	40.3	40.7	41.3	41.5	42.7	43.5	44.3	45.2	46.1	46.9	47.7	48.3	48.9	49.4	49.7	49.9	50.0
	180.0	169.0	158.1	147.2	136.4	125.8	115.1	105.1	95.0	85.0	75.2	65.5	55.9	46.5	37.1	27.8	18.5	9.2	0.
5.5	39.5	39.6	39.9	40.3	40.9	41.6	42.5	43.4	44.3	45.3	46.2	47.1	47.9	48.7	49.2	49.8	50.2	50.4	50.5
	180.0	168.9	157.9	146.9	136.0	125.4	114.9	104.6	94.5	84.5	74.7	65.1	55.6	46.2	36.8	27.6	18.3	9.2	C.
6.0	39.0	39.1	39.4	39.9	40.5	41.3	42.3	43.2	44.3	45.3	46.3	47.3	48.2	49.0	49.7	50.3	50.7	50.9	51.0
	180.0	168.8	157.6	146.5	135.6	124.5	114.1	104.1	94.0	84.0	74.3	64.7	55.2	45.8	36.6	27.4	18.2	9.1	C.
6.5	38.5	38.6	38.9	39.5	40.2	41.1	42.0	43.1	44.2	45.4	46.5	47.5	48.5	49.4	50.1	50.7	51.1	51.4	51.5
	180.0	168.7	157.4	146.2	135.2	124.4	113.9	103.6	93.4	83.5	73.0	63.4	54.0	45.5	36.3	27.2	18.1	9.0	0.
7.0	38.0	38.1	38.5	39.1	39.8	40.8	41.8	43.0	44.2	45.4	46.6	47.8	48.8	49.7	50.5	51.2	51.6	51.9	52.0
	180.0	168.5	157.1	145.9	134.0	124.0	113.4	103.0	92.9	83.1	73.4	63.9	54.5	45.2	36.1	27.0	18.0	9.0	C.
7.5	37.5	37.6	38.0	38.6	39.5	40.5	41.7	42.9	44.2	45.5	46.8	48.0	49.1	50.1	50.9	51.6	52.1	52.4	52.5
	180.0	168.4	156.4	145.5	134.4	123.5	112.9	102.5	92.4	82.4	72.9	63.4	54.1	44.9	35.8	26.8	17.8	8.9	C.
8.0	37.0	37.1	37.6	38.2	39.1	40.2	41.5	42.8	44.2	45.6	46.9	48.2	49.4	50.4	51.3	52.0	52.6	52.9	53.0
	180.0	168.3	156.0	145.2	133.9	123.0	112.3	102.0	91.9	82.1	72.5	63.0	53.8	44.6	35.6	26.6	17.7	8.9	C.
8.5	36.5	36.7	37.1	37.8	38.8	40.0	41.3	42.7	44.2	45.6	47.1	48.4	49.7	50.8	51.7	52.5	53.0	53.4	53.5
	180.0	168.1	156.4	144.8	133.5	122.5	111.8	101.1	91.5	81.6	72.0	62.6	53.4	44.4	35.4	26.5	17.6	8.8	0.
9.0	36.0	36.2	36.6	37.4	38.5	39.7	41.1	42.6	44.1	45.7	47.2	48.7	50.0	51.1	52.1	52.9	53.5	53.9	54.0
	180.0	168.0	156.1	144.4	133.0	122.0	111.3	100.9	90.9	81.1	71.6	62.3	53.1	44.1	35.1	26.3	17.5	8.7	0.
9.5	35.5	35.7	36.2	37.0	38.1	39.4	40.9	42.5	44.1	45.8	47.4	48.9	50.3	51.5	52.6	53.4	54.0	54.4	54.5
	180.0	167.8	155.8	144.0	132.6	121.5	110.7	100.4	90.4	80.6	71.1	61.9	52.8	43.8	34.9	26.1	17.4	8.7	0.
10.0	35.0	35.2	35.7	36.6	37.8	39.2	40.7	42.4	44.1	45.9	47.5	49.1	50.6	51.9	53.0	53.8	54.5	54.9	55.0
	180.0	167.7	155.5	143.6	132.1	120.9	110.2	99.9	89.8	80.1	70.7	61.5	52.4	43.5	34.7	26.0	17.3	8.6	0.
10.5	34.5	34.7	35.3	36.2	37.4	38.5	40.6	42.3	44.1	46.0	47.7	49.4	50.9	52.2	53.4	54.3	55.0	55.4	55.5
	180.0	167.5	155.2	143.2	131.6	120.4	109.7	99.3	89.3	79.7	70.3	61.1	52.1	43.3	34.5	25.6	17.2	8.6	0.
11.0	34.0	34.2	34.8	35.8	37.1	38.7	40.4	42.2	44.1	46.0	47.9	49.6	51.2	52.6	53.8	54.7	55.4	55.9	56.0
	180.0	167.4	154.9	142.8	131.1	119.5	109.1	98.8	88.8	79.2	69.9	60.7	51.8	43.0	34.3	25.7	17.1	8.5	0.
11.5	33.5	33.7	34.4	35.4	36.8	38.4	40.2	42.2	44.2	46.1	48.1	49.9	51.5	53.0	54.2	55.2	55.9	56.4	56.5
	180.0	167.2	154.6	142.4	130.0	119.3	108.5	98.2	88.3	78.7	69.4	60.4	51.5	42.7	34.1	25.5	17.0	8.5	0.
12.0	33.0	33.2	33.9	35.0	36.5	38.2	40.1	42.1	44.2	46.2	48.2	50.1	51.8	53.3	54.6	55.6	56.4	56.8	57.0
	180.0	167.1	154.1	142.0	130.1	118.8	108.0	97.7	87.8	78.3	69.0	60.0	51.2	42.5	33.9	25.4	16.9	8.4	0.
12.5	32.5	32.7	33.5	34.6	36.1	37.5	39.9	42.0	44.2	46.3	48.4	50.4	52.1	53.7	55.0	56.1	56.9	57.3	57.5
	180.0	166.9	154.0	141.5	129.6	118.2	107.4	97.1	87.3	77.8	68.6	59.6	50.9	42.2	33.7	25.2	16.8	8.4	C.
13.0	32.0	32.3	33.0	34.2	35.8	37.7	39.8	42.0	44.2	46.5	48.6	50.6	52.5	54.1	55.4	56.5	57.3	57.8	58.0
	180.0	166.7	153.7	141.1	129.1	117.7	106.8	96.6	86.6	77.3	68.2	59.3	50.6	42.0	33.5	25.1	16.7	8.3	0.
13.5	31.5	31.8	32.6	33.8	35.5	37.5	39.6	41.9	44.3	46.6	48.8	50.9	52.8	54.4	55.9	57.0	58.3	58.5	58.5
	180.0	166.5	153.3	140.6	128.5	117.1	106.3	96.0	86.2	76.9	67.6	58.9	50.3	41.7	33.3	24.9	16.6	8.3	C.
14.0	31.0	31.3	32.1	33.5	35.2	37.2	39.5	41.9	44.3	46.7	49.0	51.1	53.1	54.8	56.3	57.5	58.3	58.8	59.0
	180.0	166.3	153.0	140.1	128.0	116.5	105.7	95.5	85.7	76.4	67.4	58.6	50.6	41.5	33.1	24.8	16.5	8.3	0.
14.5	30.5	30.8	31.7	33.1	34.9	37.6	39.4	41.8	44.3	46.8	49.2	51.4	53.4	55.2	56.7	57.9	58.8	59.3	59.5
	180.0	166.1	152.0	139.6</td															

## SPIN ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) AT THE HORIZON FOR BETA=45.0DEG

	24.00	24.25	24.50	24.75	25.00	25.25	25.50	25.75	26.00	26.25	26.50	26.75	27.00	27.25	27.50	27.75	28.00
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	10.8	15.3	18.8
18.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	10.7	15.1	18.6
19.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	8.3	11.8	14.4
19.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	10.5	14.8	18.2
															8.2	11.6	14.2
															8.5	12.0	14.7
															8.6	12.2	14.9
															8.7	12.3	17.2
															10.7	15.1	18.4
															10.8	15.3	18.8
															12.0	14.7	17.0
															12.2	14.9	17.2
															12.3	14.9	17.2
															12.4	14.9	17.2
															12.5	14.9	17.2
															12.6	14.9	17.2

## SCAN NADIR ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) FOR BETA=45.0DEG

	180	170	160	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10	C
20.0	25.0	25.5	26.9	29.1	31.8	34.5	38.2	41.7	45.1	48.4	51.5	54.4	57.1	59.4	61.4	62.9	64.1	64.8	65.0
	180.0	163.4	147.7	133.3	120.4	108.5	98.4	88.7	79.7	71.1	62.8	54.8	46.8	39.0	31.2	23.4	15.6	7.8	C.
20.5	24.5	25.0	26.5	28.7	31.6	34.8	38.2	41.7	45.1	48.5	51.7	54.7	57.4	59.8	61.8	63.4	64.6	65.3	65.5
	180.0	163.1	147.2	132.7	119.7	108.2	97.8	88.2	79.2	70.7	62.5	54.5	46.6	38.8	31.0	23.3	15.5	7.8	C.
21.0	24.0	24.5	26.1	28.4	31.3	34.6	38.1	41.7	45.2	48.7	52.0	55.0	57.8	60.2	62.2	63.9	65.0	65.8	66.0
	180.0	162.8	146.6	132.0	119.0	107.5	97.1	87.6	78.7	70.3	62.1	54.2	46.4	38.6	30.9	23.2	15.5	7.7	C.
21.5	23.5	24.1	25.7	28.1	31.1	34.5	38.0	41.7	45.3	48.9	52.2	55.3	58.1	60.6	62.7	64.3	65.5	66.3	66.5
	180.0	162.5	146.0	131.3	118.3	106.8	96.5	87.1	78.2	69.9	61.8	53.9	46.2	38.5	30.8	23.1	15.4	7.7	C.
22.0	23.0	23.6	25.2	27.7	30.8	34.3	38.0	41.7	45.4	49.0	52.4	55.6	58.5	61.0	63.1	64.8	66.0	66.7	67.0
	180.0	162.0	145.4	130.6	117.6	106.1	95.9	86.5	77.8	69.5	61.5	53.6	45.9	38.3	30.6	23.0	15.4	7.7	0.
22.5	22.5	23.1	24.8	27.4	30.6	34.2	37.9	41.8	45.6	49.2	52.7	55.9	58.8	61.4	63.5	65.2	66.5	67.2	67.5
	180.0	161.8	144.8	129.9	116.8	105.4	95.2	85.9	77.3	69.1	61.1	53.4	45.7	38.1	30.5	22.9	15.2	7.7	C.
23.0	22.0	22.6	24.4	27.1	30.4	34.1	37.9	41.8	45.7	49.4	52.9	56.2	59.2	61.8	63.9	65.7	67.0	68.0	
	180.0	161.4	144.2	129.1	116.1	104.7	94.6	85.4	76.8	68.7	60.8	53.1	45.5	37.9	30.4	22.8	15.2	7.6	C.
23.5	21.5	22.2	24.0	26.8	30.2	33.5	37.9	41.8	45.8	49.6	53.2	56.5	59.5	62.1	64.4	66.2	67.4	68.2	68.5
	180.0	161.0	143.5	128.3	115.3	104.0	93.9	84.8	76.3	68.3	60.5	52.8	45.3	37.8	30.3	22.7	15.2	7.6	0.
24.0	21.0	21.7	23.6	26.5	30.0	33.8	37.8	41.9	45.9	49.8	53.4	56.8	59.9	62.5	64.6	66.6	67.9	68.7	69.0
	180.0	160.6	142.9	127.6	115.4	103.3	93.3	84.3	75.9	67.9	60.1	52.6	45.1	37.6	30.2	22.7	15.1	7.6	C.
24.5	20.5	21.2	23.2	26.2	29.8	33.7	37.8	41.9	46.0	50.0	53.7	57.1	60.2	62.9	65.2	67.1	68.4	69.2	69.5
	180.0	160.2	142.2	126.7	113.7	102.5	92.7	83.7	75.4	67.5	59.8	52.3	44.9	37.5	30.0	22.6	15.1	7.5	0.
25.0	20.0	20.7	22.8	25.9	29.6	33.6	37.8	42.0	46.2	50.1	53.9	57.4	60.6	63.3	65.7	67.5	68.9	69.7	70.0
	180.0	159.7	141.4	125.9	112.9	101.0	92.0	82.9	74.9	67.1	59.5	52.1	44.7	37.3	29.9	22.5	15.0	7.5	0.
25.5	19.5	20.3	22.4	25.6	29.4	33.5	37.8	42.1	46.3	50.3	54.2	57.7	60.9	63.7	66.1	68.0	69.4	70.2	0.
	180.0	159.3	140.7	125.1	112.1	101.1	91.4	82.6	74.5	66.7	59.2	51.8	44.5	37.2	29.8	22.4	15.0	7.5	0.
26.0	19.0	19.8	22.1	25.3	29.2	33.4	37.8	42.1	46.4	50.5	54.4	58.0	61.3	64.1	66.5	68.5	69.9	70.7	0.
	180.0	158.0	139.9	124.2	111.3	100.3	90.7	82.1	74.0	66.3	58.9	51.6	44.3	37.0	29.7	22.3	14.9	7.5	0.
26.5	18.5	19.3	21.7	25.0	29.0	33.3	37.8	42.2	46.6	50.7	54.7	58.3	61.6	64.5	67.0	68.6	70.3	0.	0.
	180.0	158.0	139.1	123.3	110.4	99.6	90.1	81.5	73.5	66.0	58.6	51.3	44.1	36.9	29.6	22.3	14.9	0.	0.
27.0	18.0	18.9	21.3	24.8	28.8	33.2	37.8	42.3	46.7	50.9	54.9	58.7	62.0	64.9	67.4	69.4	70.8	0.	0.
	180.0	157.0	138.3	122.4	109.6	98.0	89.4	81.0	73.1	65.6	58.3	51.1	43.9	36.7	29.5	22.1	14.8	0.	0.
27.5	17.5	18.4	20.9	24.5	28.7	33.2	37.8	42.4	46.9	51.2	55.2	59.0	62.4	65.3	67.8	69.5	71.3	0.	0.
	180.0	157.1	137.4	121.5	108.7	98.1	88.8	80.4	72.6	65.2	58.0	50.8	43.7	36.6	29.4	22.1	14.8	0.	0.
28.0	17.0	18.0	20.6	24.2	28.5	33.1	37.8	42.4	47.0	51.4	55.5	59.3	62.7	65.7	68.3	70.3	0.	0.	0.
	180.0	156.5	136.5	120.6	107.8	97.3	88.1	79.9	72.2	64.9	57.7	50.6	43.6	36.5	29.3	22.1	0.	0.	0.
28.5	16.5	17.5	20.2	24.0	28.4	33.0	37.8	42.5	47.2	51.6	55.7	59.6	63.1	66.1	68.7	70.8	0.	0.	0.
	180.0	155.9	135.6	119.6	105.0	96.5	87.5	79.4	71.8	64.5	57.4	50.4	43.4	36.3	29.2	22.0	0.	0.	0.
29.0	16.0	17.0	19.8	23.7	28.2	33.0	37.8	42.6	47.3	51.8	56.0	59.9	63.4	66.5	69.2	71.2	0.	0.	0.
	180.0	155.2	134.6	118.6	106.1	95.8	86.9	78.8	71.3	64.1	57.1	50.2	43.2	36.2	29.1	21.9	0.	0.	0.
29.5	15.5	16.6	19.5	23.5	28.1	32.5	37.9	42.7	47.5	52.0	56.3	60.2	63.8	66.9	69.6	71.7	0.	0.	0.
	180.0	154.5	133.6	117.6	105.2	95.0	86.2	78.3	70.9	63.8	56.8	49.9	43.0	36.1	29.0	21.9	0.	0.	0.
30.0	15.0	16.1	19.2	23.3	28.0	32.5	37.9	42.8	47.6	52.2	56.6	60.6	64.2	67.3	70.0	0.	0.	0.	0.
	180.0	153.8	132.5	116.6	104.3	94.2	85.6	77.8	70.5	63.4	56.6	49.7	42.9	35.9	28.9	0.	0.	0.	0.
30.5	14.5	15.7	18.8	23.1	27.8	32.5	37.9	42.9	47.8	52.5	56.8	60.9	64.5	67.8	70.5	0.	0.	0.	0.
	180.0	153.0	131.5	115.5	103.3	93.5	84.9	77.2	70.0	63.1	56.3	49.5	42.7	35.8	28.8	0.	0.	0.	0.
31.0	14.0	15.3	18.5	22.9	27.7	32.8	38.0	43.1	48.0	52.7	57.1	61.2	64.9	68.2	70.9	0.	0.	0.	0.
	180.0	152.2	130.3	114.4	102.4	92.7	84.3	76.7	69.6	62.7	56.0	49.3	42.5	35.7	28.7	0.	0.	0.	0.
31.5	13.5	14.0	18.2	22.7	27.6	32.8	38.0	43.2	48.2	52.9	57.4	61.5	65.3	68.6	71.3	0.	0.	0.	0.
	180.0	151.3	129.2	113.4	101.5	91.5	83.7	76.2	69.2	62.4	55.7	49.1	42.4	35.6	28.7	0.	0.	0.	0.
32.0	13.0	14.4	17.9	22.5	27.5	32.8	38.1	43.3	48.3	53.2	57.7	61.9	65.7	69.0	71.8	0.	0.	0.	0.
	180.0	150.4	128.0	112.2	100.6	91.1	83.0	75.7	68.8	62.1	55.5	48.9	42.2	35.5	28.6	0.	0.	0.	0.
32.5	12.5	13.9	17.6	22.3	27.5	32.8	38.4	43.4	48.5	53.4	58.0	62.2	66.0	69.4	72.2	0.	0.	0.	0.
	180.0	149.4	126.7	111.1	99.6	90.4	82.4	75.2	68.4	61.8	55.2	48.7	42.1	35.4	28.5	0.	0.	0.	0.
33.0	12.0	13.5	17.3	22.1	27.4	32.8	38.2	43.6	48.7	53.6	58.3	62.5	66.4	69.8	72.7	0.	0.	0.	0.
	180.0	148.3	125.4	110.0	98.7	89.6	81.8	74.7	67.9	61.4	55.0	48.5	41.9	35.3	28.4	0.	0.	0.	0.
33.5	11.5	13.1	17.0	21.9	27.3	32.8	38.3	43.7	48.9	53.9	58.5	62.9	66.8	70.2	0.	0.	0.	0.	
	180.0	147.2	124.1	108.8	97.7	88.0	81.1	74.2	67.5	61.1	54.7	48.3	41.8	35.2	28.0	0.	0.	0.	0.
34.0	11.0	12.7	16.7	21.8	27.2	32.8	38.4	43.8	49.1	54.1	58.8	63.2	67.1	70.6	0.	0.	0.	0.	
	180.0	146.0	122.7	107.6	96.7	88.0	80.5	73.7	67.1	60.8	54.5	48.1	41.7	35.0	0.	0.	0.	0.	0.
34.5	10.5	12.3	16.4	21.6	27.2	32.8	38.5	44.0	49.3	54.4	59.1	63.5	67.5	71.0	0.	0.	0.	0.	
	180.0	144.7	121.3	106.4	95.8	87.3	79.9	73.2	66.7	60.5	54.2	47.9	41.5	34.9	0.	0.	0.	0.	0.
35.0	10.0	11.9	16.2	21.5	27.1	32.5	38.6	44.1	49.5	54.6	59.4	63.9	67.9	71.6	0.	0.	0.	0.	0.
	180.0	143.0	119.8	105.2	94.8	86.5	79.3												

SPIN ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) AT THE HORIZON FOR BETA=45.0DEG

	24.00	24.25	24.50	24.75	25.00	25.25	25.50	25.75	26.00	26.25	26.50	26.75	27.00	27.25	27.50	27.75	28.00
20.0	0.	0.	0.	0.	0.	10.4	14.7	18.0	20.8	23.3	25.5	27.6	29.5	31.3	33.0	34.7	36.3
	0.	0.	0.	0.	0.	8.1	11.4	14.0	16.2	18.1	19.9	21.5	23.0	24.4	25.8	27.1	28.3
20.5	0.	0.	0.	10.3	14.5	17.8	20.6	23.0	25.3	27.3	29.2	31.0	32.7	34.3	35.9	37.4	38.8
	0.	0.	0.	8.0	11.3	13.8	16.0	17.9	19.6	21.2	22.7	24.1	25.4	26.7	27.9	29.0	30.2
21.0	0.	10.2	14.4	17.6	20.4	22.8	25.0	27.0	28.9	30.7	32.4	34.0	35.6	37.0	38.5	39.9	41.2
	0.	7.9	11.1	13.7	15.8	17.1	19.3	20.1	22.4	23.7	25.1	26.3	27.5	28.6	29.7	30.4	31.8
21.5	14.3	17.5	20.2	22.6	24.8	26.8	28.7	30.4	32.1	33.7	35.2	36.7	38.1	39.5	40.8	42.1	43.4
	11.0	13.5	15.6	17.4	19.1	20.6	22.1	23.1	24.7	25.9	27.1	28.2	29.3	30.4	31.4	32.4	33.4
22.0	20.0	22.4	24.6	26.5	28.4	30.2	31.8	33.4	34.9	36.4	37.8	39.1	40.4	41.7	43.0	44.2	45.4
	15.4	17.2	18.8	20.4	21.8	23.1	24.4	25.6	26.8	27.9	28.9	30.0	31.0	32.0	32.9	33.8	34.7
22.5	24.3	26.3	28.2	29.9	31.5	33.1	34.6	36.0	37.4	38.8	40.1	41.3	42.6	43.8	44.9	46.1	47.2
	18.6	20.1	21.5	22.8	24.1	25.3	26.4	27.5	28.6	29.6	30.6	31.5	32.5	33.4	34.3	35.1	36.0
23.0	27.9	29.6	31.3	32.8	34.3	35.7	37.1	38.4	39.7	41.0	42.2	43.4	44.5	45.7	46.8	47.9	49.0
	21.2	22.5	23.8	24.9	26.1	27.2	28.2	29.2	30.2	31.1	32.1	33.0	33.8	34.7	35.5	36.3	37.2
23.5	31.0	32.5	34.0	35.4	36.8	38.1	39.4	40.6	41.8	43.0	44.2	45.3	46.4	47.5	48.5	49.6	50.6
	23.5	24.6	25.8	26.8	27.8	28.8	29.8	30.7	31.6	32.5	33.4	34.2	35.1	35.9	36.7	37.5	38.2
24.0	33.7	35.1	36.5	37.8	39.0	40.3	41.5	42.7	43.8	44.9	46.0	47.1	48.1	49.2	50.2	51.2	52.1
	25.4	26.5	27.5	28.5	29.4	30.4	31.3	32.1	33.0	33.8	34.6	35.4	36.2	37.0	37.7	38.5	39.2
24.5	36.2	37.5	38.7	40.0	41.1	42.3	43.4	44.5	45.6	46.7	47.7	48.8	49.8	50.7	51.7	52.7	53.6
	27.2	28.2	29.1	30.0	30.9	31.7	32.6	33.4	34.2	35.0	35.8	36.5	37.3	38.0	38.7	39.4	40.1
25.0	38.4	39.6	40.8	42.0	43.1	44.2	45.3	46.3	47.3	48.4	49.4	50.3	51.3	52.2	53.2	54.1	55.0
	28.8	29.7	30.5	31.4	32.2	33.0	33.8	34.6	35.4	36.1	36.8	37.6	38.3	39.0	39.7	40.3	41.0
25.5	40.5	41.6	42.8	43.8	44.9	46.0	47.0	48.0	49.0	49.9	50.9	51.8	52.8	53.7	54.6	55.5	56.3
	30.2	31.0	31.8	32.6	33.4	34.2	34.9	35.7	36.4	37.1	37.8	38.5	39.2	39.8	40.5	41.2	41.8
26.0	42.4	43.5	44.6	45.6	46.6	47.6	48.6	49.6	50.5	51.4	52.3	53.3	54.1	55.0	55.9	56.8	57.6
	31.5	32.3	33.0	33.8	34.5	35.3	36.0	36.7	37.4	38.1	38.7	39.4	40.0	40.7	41.3	41.9	42.5
26.5	44.2	45.3	46.3	47.3	48.2	49.2	50.1	51.0	52.0	52.9	53.7	54.6	55.5	56.3	57.2	58.0	58.8
	32.7	33.4	34.2	34.9	35.6	36.3	37.0	37.6	38.3	38.9	39.6	40.2	40.8	41.4	42.1	42.7	43.2
27.0	45.9	46.9	47.9	48.8	49.8	50.7	51.6	52.5	53.3	54.2	55.1	55.9	56.7	57.6	58.4	59.2	60.0
	33.8	34.5	35.2	35.9	36.5	37.2	37.9	38.5	39.1	39.8	40.4	41.0	41.6	42.2	42.8	43.3	43.9
27.5	47.5	48.5	49.4	50.3	51.2	52.1	53.0	53.8	54.7	55.5	56.3	57.1	58.0	58.8	59.6	60.3	61.1
	34.8	35.5	36.2	36.8	37.4	38.1	38.7	39.3	39.9	40.5	41.1	41.7	42.3	42.8	43.4	44.0	44.5
28.0	49.0	49.9	50.8	51.7	52.6	53.4	54.3	55.1	55.9	56.7	57.5	58.3	59.1	59.9	60.7	61.4	62.2
	35.8	36.4	37.0	37.7	38.3	38.9	39.5	40.1	40.7	41.2	41.8	42.4	42.9	43.5	44.0	44.6	45.1
28.5	50.5	51.4	52.2	53.1	53.9	54.7	55.5	56.3	57.1	57.9	58.7	59.5	60.2	61.0	61.8	62.5	63.2
	36.7	37.3	37.9	38.5	39.1	39.7	40.2	40.8	41.4	41.9	42.5	43.0	43.6	44.1	44.6	45.1	45.6
29.0	51.9	52.7	53.5	54.5	55.2	56.0	56.8	57.5	58.3	59.1	59.8	60.6	61.3	62.1	62.8	63.5	64.2
	37.5	38.1	38.7	39.3	39.8	40.4	40.9	41.5	42.0	42.6	43.1	43.6	44.1	44.6	45.2	45.7	46.2
29.5	53.2	54.0	54.8	55.6	56.4	57.2	57.9	58.7	59.4	60.2	60.9	61.7	62.4	63.1	63.8	64.5	65.2
	38.3	38.9	39.4	40.0	40.5	41.1	41.6	42.1	42.6	43.2	43.7	44.2	44.7	45.2	45.7	46.2	46.6
30.0	54.4	55.2	56.0	56.8	57.5	58.3	59.0	59.8	60.5	61.2	62.0	62.7	63.4	64.1	64.8	65.5	66.2
	39.0	39.6	40.1	40.6	41.2	41.7	42.2	42.7	43.2	43.7	44.2	44.7	45.2	45.7	46.2	46.6	47.1
30.5	55.6	56.4	57.2	57.9	58.7	59.4	60.1	60.8	61.6	62.3	63.0	63.7	64.4	65.0	65.7	66.4	67.1
	39.7	40.2	40.8	41.3	41.8	42.3	42.8	43.3	43.8	44.3	44.8	45.3	45.7	46.1	46.6	47.1	47.5
31.0	56.8	57.6	58.3	59.0	59.7	60.5	61.2	61.9	62.6	63.3	64.0	64.6	65.3	66.0	66.6	67.3	68.0
	40.4	40.9	41.4	41.9	42.4	42.9	43.3	43.8	44.3	44.8	45.2	45.7	46.1	46.6	47.0	47.5	48.3
31.5	57.9	58.7	59.4	60.1	60.8	61.5	62.2	62.9	63.6	64.2	64.9	65.6	66.2	66.9	67.5	68.2	68.8
	41.0	41.5	42.0	42.4	42.9	43.4	43.9	44.3	44.8	45.2	45.7	46.1	46.6	47.0	47.5	47.9	48.3
32.0	59.0	59.7	60.4	61.1	61.8	62.5	63.2	63.8	64.5	65.2	65.8	66.5	67.1	67.8	68.4	69.0	69.7
	41.6	42.0	42.5	43.0	43.4	43.9	44.4	44.8	45.2	45.7	46.1	46.6	47.0	47.4	47.8	48.3	48.7
32.5	60.1	60.7	61.4	62.1	62.8	63.5	64.1	64.8	65.4	66.1	66.7	67.4	68.0	68.6	69.2	69.9	70.5
	42.1	42.6	43.0	43.5	43.9	44.4	44.8	45.3	45.7	46.1	46.6	47.0	47.4	47.8	48.2	48.6	49.0
33.0	61.1	61.7	62.4	63.1	63.7	64.4	65.0	65.7	66.3	67.0	67.6	68.2	68.8	69.5	70.1	70.7	71.3
	42.6	43.1	43.5	44.0	44.4	44.8	45.3	45.7	46.1	46.5	47.0	47.3	47.7	48.1	48.5	48.9	49.3
33.5	62.1	62.7	63.4	64.0	64.7	65.3	65.9	66.6	67.2	67.8	68.4	69.0	69.7	70.3	70.9	71.5	72.1
	43.1	43.6	44.0	44.4	44.8	45.3	45.7	46.1	46.5	46.9	47.3	47.7	48.1	48.5	48.9	49.3	49.6
34.0	63.0	63.7	64.3	64.9	65.6	66.2	66.8	67.4	68.0	68.7	69.3	69.9	70.5	71.1	71.7	72.2	72.8
	43.6	44.0	44.4	44.9	45.3	45.7	46.1	46.5	46.9	47.3	47.6	48.0	48.4	48.8	49.2	49.5	49.9
34.5	63.9	64.6	65.2	65.8	66.4	67.0	67.7	68.3	68.9	69.5	70.1	70.7	71.2	71.8	72.4	73.0	73.6
	44.0	44.5	44.9	45.3	45.7	46.0	46.4	46.8	47.2	47.6	48.0	48.3	48.7	49.1	49.5	49.9	50.2
35.0	64.8	65.5	66.1	66.7	67.3	67.9	68.5	69.1	69.7	70.3	70.9	71.4	72.0	72.6	73.2	73.7	74.3
	44.5	44.9	45.3	45.6	46.0	46.4	46.8	47.2	47.5	47.9	48.3	48.6	49.0	49.4	49.7	50.1	50.4
35.5	65.7	66.3	66.9	67.5	68.1	68.7	69.3	69.9	70.5	71.0	71.6	72.2	72.8	73.3	73.9	74.5	75.0
	44.9	45.3	45.6	46.0	46.4	46.8	47.1	47.5	47.9	48.2	48.6	49.0	49.4	49.7	50.0	50.3	50.7
36.0	66.6	67.2	67.8	68.3	68.9	69.5	70.1	70.7	71.2	71.8	72.4	72.9	73.5	74.1	74.6	75.2	75.7
	45.2	45.6	46.0	46.4	46.7	47.1	47.4	47.7	48.0	48.2	48.5	48.9	49.2	49.5	49.9	50.2	50.6
36.5	67.4	68.0	68.6														

## SCAN NADIR ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) FOR BETA=45.0DEG

	180	170	160	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10	C
40.C	5.0	8.4	14.4	20.7	27.1	33.5	39.7	45.8	51.6	57.2	62.4	67.3	71.7	C+	0+	0+	0+	0+	C+
	180.0	122.7	102.7	92.4	85.0	78.9	73.3	67.9	62.6	57.3	51.8	46.1	40.2	0-	0+	0+	0+	0+	C+
40.5	4.5	8.1	14.3	20.7	27.2	33.6	39.9	46.0	51.9	57.5	62.7	67.6	72.1	0-	0+	0+	0+	0+	C+
	180.0	119.8	100.8	91.0	84.1	78.2	72.7	67.5	62.3	57.0	51.6	45.9	40.1	0-	0+	0+	0+	0+	C+
41.C	4.0	7.9	14.2	20.7	27.2	33.7	40.0	46.2	52.1	57.7	63.1	68.0	72.4	0-	0+	0+	0+	0+	C+
	180.0	116.7	98.8	89.7	83.1	77.4	72.2	67.0	61.9	56.7	51.4	45.8	40.0	0-	0+	0+	0+	0+	C+
41.5	3.5	7.7	14.1	20.7	27.3	33.8	40.2	46.4	52.3	58.0	63.4	68.3	72.8	0-	0+	0+	0+	0+	C+
	180.0	113.3	96.9	88.4	82.1	76.7	71.6	66.6	61.6	56.5	51.2	45.6	39.9	0-	0+	0+	0+	0+	C+
42.C	3.0	7.5	14.0	20.7	27.4	33.9	40.4	46.6	52.6	58.3	63.7	68.7	73.2	0-	0+	0+	0+	0+	C+
	180.0	109.9	94.9	87.1	81.2	76.0	71.0	66.2	61.3	56.2	51.0	45.5	35.8	0-	0+	0+	0+	0+	C+
42.5	2.5	7.3	14.0	20.8	27.5	34.1	40.5	46.8	52.8	58.6	64.0	69.0	73.6	0-	C+	C+	0-	0-	C+
	180.0	106.2	92.9	85.8	80.2	75.3	70.5	65.7	60.9	56.0	50.8	45.4	35.7	0-	0+	0+	0+	0+	C+
43.0	2.0	7.2	14.0	20.8	27.6	34.2	40.7	47.0	53.1	58.9	64.3	69.4	74.0	0-	0+	0+	0+	0+	C+
	180.0	102.4	90.9	84.4	79.3	74.5	69.9	65.3	60.6	55.7	50.6	45.2	39.6	0-	0+	0+	0+	0+	C+
43.5	1.5	7.1	14.0	20.9	27.7	34.3	40.9	47.2	53.3	59.1	64.6	69.7	74.4	0-	0+	0+	0+	0+	C+
	180.0	98.9	88.9	83.1	78.3	73.0	69.4	64.9	60.3	55.5	50.4	45.1	39.5	0-	0+	0+	0+	0+	C+
44.C	1.0	7.1	14.0	20.9	27.8	34.5	41.0	47.4	53.6	59.4	65.0	70.1	C+	0+	0+	0+	0+	0+	C+
	180.0	94.5	86.9	81.1	77.4	73.1	68.9	64.5	59.9	55.2	50.2	45.0	0-	0+	0+	0+	0+	0+	C+
44.5	0.5	7.1	14.1	21.0	27.9	34.6	41.2	47.6	53.8	59.7	65.3	70.4	0-	0+	0+	0+	0+	0+	C+
	180.0	90.5	84.9	80.1	76.5	72.4	68.3	64.1	59.6	55.0	50.1	44.8	0-	0+	0+	0+	0+	0+	C+
45.C	0.	7.1	14.1	21.1	28.0	34.8	41.4	47.9	54.1	60.0	65.6	70.8	0-	0-	0-	0-	0-	0-	C+
	0.	86.5	82.9	79.1	75.6	71.0	67.8	63.7	59.3	54.7	49.9	44.7	0-	0-	0-	0-	0-	0-	C+
45.5	0.5	7.1	14.2	21.2	28.1	34.5	41.6	48.1	54.3	60.3	65.9	71.1	0-	0-	0-	0-	0-	0-	C+
	0.	82.5	80.9	78.0	74.7	71.1	67.3	63.3	59.0	54.5	49.7	44.6	0-	0-	0-	0-	0-	0-	C+
46.C	1.0	7.2	14.3	21.3	28.3	35.1	41.8	48.3	54.6	60.6	66.2	71.5	C+	0-	0-	0-	0-	0-	C+
	0.	78.5	75.9	71.7	67.8	73.8	70.4	66.8	62.9	58.7	54.3	49.5	44.5	C+	0-	0-	0-	0-	C+
46.5	1.5	7.3	14.4	21.4	28.4	35.2	42.0	48.5	54.8	60.9	66.6	71.9	C+	0-	0-	0-	0-	0-	C+
	0.	74.7	77.1	75.5	72.9	69.7	66.2	62.5	58.4	54.0	49.4	44.4	C+	0-	0-	0-	0-	0-	C+
47.C	2.0	7.5	14.5	21.5	28.5	35.4	42.2	48.8	55.1	61.2	66.9	72.2	0-	0-	0-	0-	0-	C+	C+
	0.	71.0	75.2	74.3	72.0	69.1	65.7	62.1	58.1	54.8	49.2	44.3	C+	0-	0-	0-	0-	0-	C+
47.5	2.5	7.6	14.6	21.7	28.7	35.6	42.4	49.0	55.4	61.5	67.2	72.6	C+	0-	0-	0-	0-	0-	C+
	0.	67.5	73.3	73.1	71.1	68.4	65.2	61.7	57.8	53.6	49.0	44.1	0-	0-	0-	0-	0-	0-	C+
48.C	3.0	7.8	14.8	21.8	28.9	35.8	42.6	49.2	55.6	61.8	67.5	72.9	0-	0-	0-	0-	0-	C+	C+
	0.	64.1	71.5	71.9	70.3	67.8	64.7	61.3	57.5	53.4	48.9	44.0	0-	0-	0-	0-	0-	0-	C+
48.5	3.5	8.1	14.9	22.0	29.0	36.0	42.8	49.5	55.9	62.1	67.9	73.3	0-	0-	0-	0-	0-	C+	C+
	0.	61.0	69.7	70.7	69.4	67.1	64.3	60.9	57.2	53.2	48.7	43.9	0-	0-	0-	0-	0-	0-	C+
49.C	4.0	8.3	15.1	22.2	29.2	36.2	43.1	49.7	56.2	62.4	68.2	73.7	0-	0-	0-	0-	0-	C+	C+
	0.	58.0	68.0	69.5	68.6	66.5	63.8	60.6	56.9	53.0	48.6	43.8	C+	0-	0-	0-	0-	0-	C+
49.5	4.5	8.6	15.3	22.3	29.4	36.4	43.3	50.0	56.5	62.7	68.5	74.0	0-	0-	0-	0-	0-	C+	C+
	0.	55.2	66.3	68.4	67.8	65.9	63.3	60.2	56.7	52.8	48.4	43.7	0-	0-	0-	0-	0-	0-	C+
50.C	5.0	8.9	15.5	22.5	29.6	36.6	43.5	50.2	56.7	63.0	68.9	74.4	0-	0-	0-	0-	0-	C+	C+
	0.	52.5	64.7	67.3	66.9	62.8	59.8	56.4	52.5	48.3	43.6	0-	0-	0-	0-	0-	0-	C+	
50.5	5.5	9.2	15.7	22.7	29.8	36.8	43.7	50.5	57.0	63.3	69.2	74.7	0-	0-	0-	0-	0-	C+	C+
	0.	50.0	63.0	66.2	66.1	64.7	62.4	59.5	56.1	52.3	48.1	43.5	0-	0-	0-	0-	0-	0-	C+
51.C	6.0	9.5	16.0	22.9	30.0	37.0	44.0	50.7	57.3	63.6	69.5	75.1	0-	0-	0-	0-	0-	C+	C+
	0.	47.8	61.5	65.1	65.3	61.9	59.1	55.9	52.1	48.0	43.4	0-	0-	0-	0-	0-	0-	C+	
51.5	6.5	9.5	16.2	23.2	30.2	37.3	44.2	51.0	57.6	63.9	69.9	75.5	0-	0-	0-	0-	0-	C+	C+
	0.	45.7	60.0	64.6	63.5	61.4	58.0	55.6	52.0	47.9	43.3	0-	0-	0-	0-	0-	0-	C+	
52.C	7.0	10.2	16.5	23.4	30.4	37.5	44.4	51.3	57.9	64.2	70.2	0-	0-	0-	0-	0-	0-	C+	
	0.	43.7	58.5	63.0	63.8	62.9	61.0	58.4	55.3	51.8	47.7	0-	0-	0-	0-	0-	0-	C+	
52.5	7.5	10.6	16.7	23.6	30.7	37.7	44.7	51.5	58.1	64.5	70.5	0-	0-	0-	0-	0-	0-	C+	
	0.	41.9	57.1	62.0	63.0	62.3	60.6	58.1	55.1	51.6	47.6	0-	0-	0-	0-	0-	0-	C+	
53.C	8.0	11.0	17.0	23.8	30.9	38.0	44.9	51.8	58.4	64.8	70.9	0-	0-	0-	0-	0-	0-	C+	
	0.	40.1	55.7	61.0	62.3	61.7	60.1	57.8	54.8	51.4	47.5	0-	0-	0-	0-	0-	0-	C+	
53.5	8.5	11.4	17.3	24.1	31.1	38.2	45.2	52.0	58.7	65.1	71.2	0-	0-	0-	0-	0-	0-	C+	
	0.	38.5	54.4	60.0	61.6	61.2	59.7	57.4	54.6	51.2	47.4	0-	0-	0-	0-	0-	0-	C+	
54.C	9.0	11.8	17.6	24.3	31.4	38.4	45.4	52.3	59.0	65.4	71.6	0-	C+	C+	0-	0-	0-	C+	
	0.	37.0	53.1	59.0	60.8	60.6	59.3	57.1	54.3	51.0	47.2	0-	0-	0-	0-	0-	0-	C+	
54.5	9.5	12.2	17.9	24.6	31.6	38.7	45.7	52.6	59.3	65.8	71.9	0-	C+	C+	0-	0-	0-	C+	
	0.	35.6	51.9	58.0	60.1	60.1	58.8	56.8	54.0	50.9	47.1	0-	C+	C+	0-	0-	0-	C+	
55.C	10.0	12.6	18.2	24.9	31.9	38.6	46.0	52.9	59.6	66.1	72.2	0-	C+	C+	0-	0-	0-	C+	
	0.	34.3	50.7	57.2	59.4	59.5	58.4	56.5	53.8	50.7	47.0	0-	C+	C+	0-	0-	0-	C+	
55.5	10.5	13.0	18.5	25.2	32.1	39.2	46.2	53.1	59.9	66.4	72.6	0-	C+	C+	0-	0-	0-	C+	
	0.	33.1	49.5	56.3	58.7	59.0	58.0	56.1	53.6	50.5	46.9	0-	C+	C+	0-	0-	0-	C+	
56.C	11.0	13.4	18.9	25.4	32.4	39.4	46.5	53.4	60.2	66.7	72.9	0-	C+	C+	0-	0-	0-	C+	
	0.	32.0	48.4	55.4	58.1	58.5	57.6	55.8	53.4	50.3	46.8	0-	C+	C+	0-	0-	0-	C+	
56.5	11.5	13.8	19.2	25.7	32.7	39.7	46.8	53.7	60.5	66.7	73.0	0-	C+	C+	0-	0-	0-	C+	
	0.	30.9	47.3	54.6	57.4	58.0	57.2	55.5	53.2	50.2	46.6	0-	C+	C+	0-	0-	0-	C+	
57.C	12.0	14.3	19.5	26.0	32.9	40.0	47.0	54.0	60.8	67.3	73.6	0-	C+	C+	0-	0-	0-	C+	
	0.	29.5	46.3	53.7	56.7	57.5	56.8	55.2	52.9	50.0	46.5	0-	C+	C+	0-	0-	0-	C+	
57.5	12.5</td																		

SPIN ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) AT THE HORIZON FOR BETA=45.0DEG

	24.00	24.25	24.50	24.75	25.00	25.25	25.50	25.75	26.00	26.25	26.50	26.75	27.00	27.25	27.50	27.75	28.00
40.0	72.7	73.3	73.8	74.3	74.8	75.3	75.8	76.4	76.9	77.4	77.9	78.4	78.9	79.4	79.9	80.4	80.9
	47.7	48.0	48.3	48.6	48.8	49.1	49.4	49.7	50.0	50.3	50.6	50.9	51.1	51.4	51.7	52.0	52.2
40.5	73.4	73.9	74.5	75.0	75.5	76.0	76.5	77.0	77.5	78.0	78.5	79.0	79.5	80.0	80.5	81.0	81.5
	47.9	48.2	48.5	48.8	49.1	49.3	49.6	49.9	50.2	50.5	50.7	51.0	51.3	51.6	51.8	52.1	52.4
41.0	74.1	74.6	75.1	75.6	76.2	76.7	77.2	77.7	78.1	78.6	79.1	79.6	80.1	80.6	81.1	81.6	82.0
	48.1	48.4	48.7	49.0	49.2	49.5	49.8	50.1	50.3	50.6	50.9	51.2	51.4	51.7	52.0	52.2	52.5
41.5	74.8	75.3	75.8	76.3	76.8	77.3	77.8	78.3	78.8	79.3	79.7	80.2	80.7	81.2	81.7	82.2	82.6
	48.3	48.6	48.9	49.2	49.4	49.7	49.9	50.0	50.2	50.5	50.8	51.0	51.3	51.6	51.8	52.1	52.3
42.0	75.5	76.0	76.5	77.0	77.4	77.9	78.4	78.9	79.4	79.9	80.4	80.8	81.3	81.8	82.3	82.7	83.2
	48.5	48.8	49.1	49.3	49.6	49.9	50.1	50.4	50.6	50.9	51.2	51.4	51.7	51.9	52.2	52.4	52.7
42.5	76.1	76.6	77.1	77.6	78.1	78.6	79.0	79.5	80.0	80.5	81.0	81.4	81.9	82.4	82.8	83.3	83.8
	48.7	49.0	49.2	49.5	49.8	50.0	50.3	50.5	50.8	51.0	51.3	51.5	51.8	52.0	52.3	52.5	52.8
43.0	76.8	77.3	77.7	78.2	78.7	79.2	79.7	80.1	80.6	81.1	81.5	82.0	82.5	82.9	83.4	83.9	84.3
	48.9	49.1	49.4	49.7	49.9	50.2	50.4	50.7	50.9	51.2	51.4	51.6	51.9	52.1	52.4	52.6	52.8
43.5	77.4	77.9	78.4	78.8	79.3	79.8	80.3	80.7	81.2	81.7	82.1	82.6	83.0	83.5	84.0	84.4	84.9
	49.1	49.3	49.6	49.8	50.1	50.3	50.5	50.8	51.0	51.3	51.5	51.7	52.0	52.2	52.4	52.7	52.9
44.0	78.0	78.5	79.0	79.4	79.9	80.4	80.8	81.3	81.8	82.2	82.7	83.2	83.6	84.1	84.5	85.0	85.4
	49.2	49.5	49.7	49.9	50.2	50.4	50.7	50.9	51.1	51.4	51.6	51.8	52.1	52.3	52.5	52.7	53.0
44.5	78.6	79.1	79.6	80.0	80.5	81.0	81.4	81.9	82.4	82.8	83.3	83.7	84.2	84.6	85.1	85.5	86.0
	49.4	49.6	49.8	50.1	50.3	50.5	50.8	51.0	51.2	51.5	51.7	51.9	52.1	52.4	52.6	52.8	53.0
45.0	79.2	79.7	80.2	80.6	81.1	81.6	82.0	82.5	82.9	83.4	83.8	84.3	84.7	85.2	85.6	86.1	86.5
	49.5	49.7	50.0	50.2	50.4	50.7	50.9	51.1	51.3	51.5	51.8	52.0	52.2	52.4	52.6	52.9	53.1
45.5	79.8	80.3	80.8	81.2	81.7	82.1	82.6	83.0	83.5	83.9	84.4	84.8	85.3	85.7	86.1	86.6	87.0
	49.6	49.9	50.1	50.3	50.5	50.7	50.9	51.0	51.2	51.4	51.6	51.8	52.1	52.3	52.5	52.7	52.9
46.0	80.4	80.9	81.3	81.8	82.3	82.7	83.1	83.6	84.0	84.5	84.9	85.4	85.8	86.2	86.7	87.1	87.6
	49.8	50.0	50.2	50.4	50.6	50.8	51.1	51.3	51.5	51.7	51.9	52.1	52.3	52.5	52.7	52.9	53.1
46.5	81.0	81.5	81.9	82.4	82.8	83.3	83.7	84.1	84.6	85.0	85.5	85.9	86.3	86.8	87.2	87.6	88.1
	49.9	50.1	50.3	50.5	50.7	50.9	51.1	51.3	51.5	51.6	51.8	52.0	52.2	52.4	52.6	52.8	53.0
47.0	81.6	82.0	82.5	82.9	83.4	83.8	84.3	84.7	85.1	85.6	86.0	86.4	86.9	87.3	87.7	88.2	88.6
	50.0	50.2	50.4	50.6	50.8	51.0	51.2	51.4	51.6	51.8	52.0	52.2	52.4	52.6	52.8	53.0	53.2
47.5	82.2	82.6	83.1	83.5	83.9	84.4	84.8	85.2	85.7	86.1	86.5	87.0	87.4	87.8	88.2	88.7	89.1
	50.1	50.3	50.5	50.7	50.9	51.1	51.3	51.5	51.7	51.9	52.1	52.3	52.4	52.6	52.8	53.0	53.2
48.0	82.7	83.2	83.6	84.0	84.5	84.9	85.3	85.8	86.2	86.6	87.1	87.5	87.9	88.3	88.8	89.2	89.6
	50.2	50.4	50.6	50.8	50.9	51.1	51.3	51.5	51.7	51.9	52.1	52.3	52.5	52.7	52.8	53.0	53.2
48.5	83.3	83.7	84.2	84.6	85.0	85.5	85.9	86.3	86.7	87.2	87.6	88.0	88.4	88.8	89.3	89.7	90.1
	50.2	50.4	50.6	50.8	50.9	51.0	51.2	51.4	51.6	51.8	51.9	52.1	52.3	52.5	52.7	52.9	53.2
49.0	83.9	84.3	84.7	85.1	85.6	86.0	86.4	86.8	87.3	87.7	88.1	88.5	88.9	89.4	89.8	90.2	90.6
	50.3	50.5	50.7	50.9	51.1	51.3	51.4	51.6	51.8	52.0	52.2	52.3	52.5	52.7	52.9	53.0	53.2
49.5	84.4	84.8	85.2	85.7	86.1	86.5	86.9	87.4	87.8	88.2	88.6	89.0	89.4	89.9	90.3	90.7	91.1
	50.4	50.6	50.8	50.9	51.1	51.3	51.5	51.6	51.8	52.0	52.2	52.3	52.5	52.7	52.9	53.0	53.2
50.0	84.9	85.4	85.8	86.2	86.6	87.0	87.5	87.9	88.3	88.7	89.1	89.5	89.9	90.4	90.8	91.2	91.6
	50.4	50.6	50.8	51.0	51.2	51.3	51.5	51.7	51.8	52.0	52.2	52.4	52.5	52.7	52.9	53.0	53.2
50.5	85.5	85.9	86.3	86.7	87.1	87.6	88.0	88.4	88.8	89.2	89.6	90.0	90.4	90.9	91.3	91.7	92.1
	50.5	50.7	50.8	51.0	51.2	51.4	51.5	51.7	51.9	52.0	52.2	52.4	52.5	52.7	52.8	53.0	53.2
51.0	86.0	86.4	86.8	87.3	87.7	88.1	88.5	88.9	89.3	89.7	90.1	90.5	90.9	91.3	91.7	92.2	92.6
	50.5	50.7	50.9	51.1	51.2	51.4	51.5	51.7	51.9	52.0	52.2	52.4	52.5	52.7	52.8	53.0	53.1
51.5	86.5	86.9	87.4	87.8	88.2	88.6	89.0	89.4	89.8	90.2	90.6	91.0	91.4	91.8	92.2	92.6	93.0
	50.6	50.8	50.9	51.1	51.2	51.4	51.6	51.7	51.9	52.0	52.2	52.3	52.5	52.7	52.8	53.0	53.1
52.0	87.1	87.5	87.9	88.3	88.7	89.1	89.5	89.9	90.3	90.7	91.1	91.5	91.9	92.3	92.7	93.1	93.5
	50.6	50.8	50.9	51.1	51.2	51.4	51.5	51.7	51.9	52.0	52.2	52.3	52.5	52.6	52.8	53.0	53.1
52.5	87.6	88.0	88.4	88.8	89.2	89.6	90.0	90.4	90.8	91.2	91.6	92.0	92.4	92.8	93.2	93.6	94.0
	50.7	50.8	51.0	51.1	51.3	51.4	51.6	51.7	51.9	52.0	52.2	52.3	52.5	52.7	52.9	53.0	53.0
53.0	88.1	88.5	88.9	89.3	89.7	90.1	90.5	90.9	91.3	91.7	92.1	92.5	92.9	93.3	93.7	94.1	94.5
	50.7	50.8	50.9	51.0	51.1	51.3	51.4	51.6	51.7	51.9	52.0	52.2	52.3	52.4	52.6	52.7	52.8
53.5	88.6	89.0	89.4	89.8	90.2	90.6	91.0	91.4	91.8	92.2	92.6	93.0	93.4	93.8	94.2	94.6	94.9
	50.7	50.8	51.0	51.1	51.3	51.4	51.6	51.7	51.8	52.0	52.1	52.3	52.4	52.5	52.7	52.8	52.9
54.0	89.1	89.5	89.9	90.3	90.7	91.1	91.5	91.9	92.3	92.7	93.1	93.5	93.8	94.2	94.6	95.0	95.4
	50.7	50.9	51.0	51.1	51.3	51.4	51.6	51.7	51.8	52.0	52.1	52.2	52.4	52.5	52.6	52.7	52.8
54.5	89.6	90.0	90.4	90.8	91.2	91.6	92.0	92.4	92.8	93.2	93.5	93.9	94.3	94.7	95.1	95.5	95.9
	50.7	50.9	51.0	51.1	51.3	51.4	51.5	51.7	51.8	52.0	52.1	52.2	52.3	52.4	52.6	52.7	52.8
55.0	90.1	90.5	90.9	91.3	91.7	92.1	92.5	92.9	93.3	93.7	94.1	94.5	94.9	95.3	95.7	96.1	96.5
	50.7	50.9	51.0	51.1	51.2	51.4	51.5	51.6	51.7	51.8	52.0	52.1	52.2	52.3	52.4	52.5	52.6
55.5	90.6	91.0	91.4	91.8	92.2	92.6	93.0	93.3	93.7	94.1	94.5	94.9	95.3	95.6	96.0	96.4	96.8
	50.7	50.8	51.0	51.1	51.3	51.4	51.5	51.6	51.7	51.8	52.0	52.1	52.2	52.3	52.4	52.5	52.6
56.0	91.1	91.5	91.9	92.3	92.7	93.0	93.4	93.8	94.2	94.6	95.0	95.4	95.8	96.1	96.5	96.9	97.3
	50.7	50.8	51.0	51.1	51.2	51.3	51.4	51.5	51.6	51.7	51.8	52.0	52.1	52.2	52.3		

## SCAN NACIR ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) FCR BETA=45.0DEG

	180	170	160	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10	C
60.0	15.0	16.9	21.7	27.9	34.6	41.7	48.7	55.7	62.6	69.3	75.7	0.	0.	0.	0.	0.	0.	0.	C.
0.	24.9	40.8	49.1	53.1	54.6	54.0	53.5	51.6	49.1	45.9	0.	0.	0.	0.	0.	0.	0.	0.	C.
60.5	15.5	17.4	22.1	28.2	35.0	41.9	49.0	56.0	62.9	69.6	76.0	0.	C.	0.	0.	0.	0.	0.	C.
0.	24.3	40.0	48.4	52.5	54.1	54.2	53.2	51.4	49.0	45.9	0.	0.	0.	0.	0.	0.	0.	0.	C.
61.0	16.0	17.8	22.5	28.5	35.3	42.2	49.3	56.3	63.2	70.0	76.4	0.	0.	0.	0.	0.	0.	0.	C.
0.	23.6	39.2	47.7	51.9	53.7	53.4	53.0	51.4	48.8	45.8	0.	0.	0.	0.	0.	0.	0.	0.	C.
61.5	16.5	18.3	22.9	28.9	35.6	42.5	49.6	56.6	63.6	70.3	76.0	0.	0.	0.	0.	0.	0.	0.	C.
0.	23.0	38.5	47.0	51.4	53.2	53.3	52.7	51.1	48.7	45.7	0.	0.	0.	0.	0.	0.	0.	0.	C.
62.0	17.0	18.8	23.3	29.2	35.9	42.8	49.9	56.9	63.9	70.6	76.6	0.	0.	0.	0.	0.	0.	0.	C.
0.	22.4	37.1	46.4	50.8	52.8	53.2	52.4	50.9	48.6	45.6	0.	0.	0.	0.	0.	0.	0.	0.	C.
62.5	17.5	19.2	23.7	29.6	36.2	43.1	50.2	57.2	64.2	70.9	76.9	0.	0.	0.	0.	0.	0.	0.	C.
0.	21.9	37.0	45.7	50.3	52.4	52.9	52.2	50.7	48.4	45.4	0.	0.	0.	0.	0.	0.	0.	0.	C.
63.0	18.0	19.7	24.1	29.9	36.5	43.4	50.5	57.6	64.5	71.3	77.0	0.	0.	0.	0.	0.	0.	0.	C.
0.	21.4	36.4	45.1	49.8	52.0	52.5	51.9	50.9	48.3	45.3	0.	0.	0.	0.	0.	0.	0.	0.	C.
63.5	18.5	20.2	24.5	30.3	36.8	43.8	50.8	57.9	64.8	71.6	77.6	0.	0.	0.	0.	0.	0.	0.	C.
0.	20.9	35.7	44.5	49.3	51.6	52.2	51.7	50.3	48.2	45.2	0.	0.	0.	0.	0.	0.	0.	0.	C.
64.0	19.0	20.6	24.9	30.6	37.2	44.1	51.1	58.2	65.1	71.9	77.9	0.	0.	0.	0.	0.	0.	0.	C.
0.	20.4	35.1	43.9	48.8	51.2	51.9	51.4	50.1	48.1	45.1	0.	0.	0.	0.	0.	0.	0.	0.	C.
64.5	19.5	21.1	25.3	31.0	37.5	44.4	51.4	58.5	65.5	72.3	78.3	0.	0.	0.	0.	0.	0.	0.	C.
0.	19.9	34.5	43.3	48.3	50.8	51.6	51.2	49.9	47.9	44.9	0.	0.	0.	0.	0.	0.	0.	0.	C.
65.0	20.0	21.6	25.7	31.4	37.8	44.7	51.7	58.8	65.8	72.6	78.6	0.	0.	0.	0.	0.	0.	0.	C.
0.	19.5	33.9	42.8	47.8	50.4	51.3	50.9	49.0	47.8	44.8	0.	0.	0.	0.	0.	0.	0.	0.	C.
65.5	20.5	22.0	26.1	31.7	38.2	45.0	52.1	59.1	66.1	72.9	78.9	0.	0.	C.	C.	0.	0.	0.	C.
0.	19.1	33.3	42.2	47.3	50.0	50.9	50.7	49.6	47.7	44.7	0.	0.	C.	C.	0.	0.	0.	0.	C.
66.0	21.0	22.5	26.5	32.1	38.5	45.3	52.4	59.4	66.4	73.3	79.3	0.	C.						
0.	18.7	32.8	41.7	46.9	49.6	50.5	50.5	49.4	47.6	44.6	0.	C.							
66.5	21.5	23.0	28.0	32.5	38.9	45.7	52.7	59.8	66.8	73.6	79.6	0.	C.						
0.	16.2	32.2	41.2	46.4	49.2	50.4	50.3	49.3	47.5	44.5	0.	C.							
67.0	22.0	23.5	27.4	32.5	39.2	46.0	53.0	60.1	67.1	74.0	80.0	0.	C.						
0.	16.0	31.7	40.7	46.0	48.5	50.1	50.1	49.1	47.4	44.4	0.	C.							
67.5	22.5	23.9	27.8	33.2	39.6	46.2	53.3	60.4	67.4	74.3	80.3	0.	C.						
0.	17.6	31.2	40.2	45.5	48.5	49.8	49.8	48.8	46.8	43.8	0.	C.							
68.0	23.0	24.4	28.2	33.6	39.9	46.7	53.7	60.7	67.7	74.6	80.6	0.	C.	C.	C.	0.	0.	0.	C.
0.	17.3	30.7	39.7	45.1	48.1	49.5	49.5	48.6	46.7	43.7	0.	C.	C.	C.	0.	0.	0.	0.	C.
68.5	23.5	24.9	28.7	34.0	40.3	47.0	54.0	61.0	68.1	75.0	81.9	0.	0.	0.	0.	0.	0.	0.	C.
0.	17.0	30.0	39.2	44.7	47.8	49.2	49.4	48.6	47.1	44.1	0.	0.	0.	0.	0.	0.	0.	0.	C.
69.0	24.0	25.4	29.1	34.4	40.6	47.3	54.3	61.4	68.4	75.3	82.2	0.	0.	0.	0.	0.	0.	0.	C.
0.	16.6	29.8	38.7	44.3	47.4	49.2	49.2	48.3	47.0	44.0	0.	0.	0.	0.	0.	0.	0.	0.	C.
69.5	24.5	25.9	29.5	34.8	41.0	47.7	54.6	61.7	68.7	75.7	82.7	0.	0.	0.	0.	0.	0.	0.	C.
0.	16.4	29.4	38.3	43.9	46.1	47.1	47.0	46.0	44.8	41.8	0.	0.	0.	0.	0.	0.	0.	0.	C.
70.0	25.0	26.3	30.0	35.2	41.3	48.0	55.0	62.0	69.1	76.0	83.0	0.	0.	0.	0.	0.	0.	0.	C.
0.	16.1	28.9	37.8	43.5	46.8	48.4	48.8	48.2	46.8	43.8	0.	0.	0.	0.	0.	0.	0.	0.	C.
70.5	25.5	26.8	30.4	35.6	41.7	48.4	55.3	62.4	69.4	76.3	83.3	0.	0.	0.	0.	0.	0.	0.	C.
0.	15.8	28.5	37.4	43.1	46.5	48.1	48.6	48.1	46.7	43.7	0.	0.	0.	0.	0.	0.	0.	0.	C.
71.0	26.0	27.3	30.9	36.0	42.1	48.7	55.6	62.7	69.7	76.7	83.7	0.	0.	0.	0.	0.	0.	0.	C.
0.	15.5	28.1	37.0	42.7	46.1	47.9	48.4	47.9	46.6	43.6	0.	0.	0.	0.	0.	0.	0.	0.	C.
71.5	26.5	27.8	31.3	36.4	42.6	49.1	56.0	63.0	70.1	77.1	84.1	0.	0.	0.	0.	0.	0.	0.	C.
0.	15.3	27.7	36.6	42.3	45.8	47.6	48.2	47.8	45.8	42.8	0.	0.	0.	0.	0.	0.	0.	0.	C.
72.0	27.0	28.3	31.7	36.8	42.8	49.4	56.3	63.4	70.4	77.4	84.4	0.	0.	0.	0.	0.	0.	0.	C.
0.	15.0	27.4	36.2	42.0	45.5	47.4	48.0	47.7	45.7	42.7	0.	0.	0.	0.	0.	0.	0.	0.	C.
72.5	27.5	28.7	32.2	37.2	43.2	49.8	56.6	63.7	70.7	77.7	84.7	0.	0.	0.	0.	0.	0.	0.	C.
0.	14.8	27.0	35.8	41.6	45.2	47.1	47.8	47.5	45.5	42.5	0.	0.	0.	0.	0.	0.	0.	0.	C.
73.0	28.0	29.2	32.6	37.6	43.6	50.1	57.0	64.0	71.1	78.1	85.1	0.	0.	0.	0.	0.	0.	0.	C.
0.	14.6	26.6	35.4	41.3	44.9	46.9	46.9	47.7	45.4	42.4	0.	0.	0.	0.	0.	0.	0.	0.	C.
73.5	28.5	29.7	33.1	38.0	43.9	50.5	57.3	64.4	71.4	78.4	85.4	0.	0.	0.	0.	0.	0.	0.	C.
0.	14.3	26.3	35.0	40.9	44.6	46.6	47.5	47.3	45.3	42.3	0.	0.	0.	0.	0.	0.	0.	0.	C.
74.0	29.0	30.2	33.5	38.4	44.3	50.8	57.7	64.7	71.8	78.8	85.8	0.	0.	0.	0.	0.	0.	0.	C.
0.	14.1	26.0	34.7	40.6	44.3	46.4	47.3	47.2	45.2	42.2	0.	0.	0.	0.	0.	0.	0.	0.	C.
74.5	29.5	30.7	34.0	38.8	44.7	51.2	58.0	65.0	72.1	79.1	86.1	0.	0.	0.	0.	0.	0.	0.	C.
0.	13.9	25.6	34.3	40.3	44.1	46.2	47.1	47.0	45.0	42.0	0.	0.	0.	0.	0.	0.	0.	0.	C.
75.0	30.0	31.2	34.6	39.2	45.1	51.5	58.4	65.4	72.4	79.4	86.4	0.	0.	0.	0.	0.	0.	0.	C.
0.	13.7	25.3	34.0	39.9	43.8	46.0	47.0	46.9	45.0	42.0	0.	0.	0.	0.	0.	0.	0.	0.	C.
75.5	30.5	31.7	34.9	39.7	45.5	51.9	58.7	65.7	72.8	79.8	86.8	0.	0.	0.	0.	0.	0.	0.	C.
0.	13.5	25.0	33.6	39.6	43.5	45.5	46.8	46.8	45.0	42.0	0.	0.	0.	0.	0.	0.	0.	0.	C.
76.0	31.0	32.1	35.3	40.1	45.8	52.3	59.1	66.1	73.1	80.1	87.1	0.	0.	0.	0.	0.	0.	0.	C.
0.	13.3	24.7	33.3	39.3	43.2	45.6	46.6	46.6	43.7	40.7	0.	0.	0.	0.	0.	0.	0.	0.	C.
76.5	31.5	32.6	35.8	40.5	46.2	52.6	59.4	66.4	73.5	80.5	87.5	0.	0.	0.	0.	0.	0.	0.	C.
0.	13.2	24.4	33.0	39.0	43.0	45.3	46.5	46.6	43.6	40.6	0.	0.	0.	0.	0.	0.	0.	0.	C.
77.0	32.0	33.1	36.2	40.9	46.6	53.0	59.8	66.8	73.8	80.8	87.8	0.	0.	0.	0.	0.	0.	0.	C.
0.	13.0	24.1	32.7	38.7	42.7	45.1	46.3	46.5	43.6	40.6	0.	0.	0.	0.	0.				

SPIN ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) AT THE HORIZON FOR BETA=45.0DEG

	24.00	24.25	24.50	24.75	25.00	25.25	25.50	25.75	26.00	26.25	26.50	26.75	27.00	27.25	27.50	27.75	28.00	
60.0	95.0	95.4	95.7	96.1	96.5	96.8	97.2	97.6	98.0	98.3	98.7	99.1	99.4	99.8	100.2	100.5	100.9	
	50.5	50.5	50.6	50.7	50.8	50.9	51.0	51.1	51.2	51.3	51.4	51.4	51.5	51.6	51.7	51.8	51.8	
60.5	95.5	95.8	96.2	96.6	96.9	97.3	97.7	98.1	98.4	98.8	99.2	99.5	99.9	100.3	100.6	101.0	101.4	
	50.4	50.5	50.6	50.7	50.8	50.9	51.0	51.1	51.2	51.3	51.3	51.4	51.5	51.6	51.7	51.7	51.7	
61.0	95.9	96.3	96.7	97.0	97.4	97.8	98.2	98.5	98.9	99.3	99.6	100.0	100.4	100.7	101.1	101.5	101.8	
	50.3	50.4	50.5	50.6	50.7	50.8	50.9	51.0	51.1	51.2	51.2	51.3	51.4	51.5	51.5	51.6	51.6	
61.5	96.4	96.8	97.1	97.5	97.9	98.2	98.6	99.0	99.4	99.7	100.1	100.4	100.8	101.2	101.5	101.9	102.3	
	50.3	50.4	50.4	50.5	50.6	50.7	50.8	50.9	51.0	51.1	51.1	51.2	51.3	51.4	51.5	51.5	51.5	
62.0	96.9	97.2	97.6	98.0	98.3	98.7	99.1	99.4	99.8	100.2	100.5	100.9	101.3	101.6	102.0	102.4	102.7	
	50.2	50.3	50.4	50.5	50.5	50.6	50.7	50.8	50.8	50.9	51.0	51.0	51.1	51.2	51.2	51.3	51.4	
62.5	97.3	97.7	98.1	98.4	98.8	99.2	99.5	99.9	100.3	100.6	101.0	101.4	101.7	102.1	102.5	102.8	103.2	
	50.1	50.2	50.3	50.4	50.4	50.5	50.5	50.6	50.7	50.8	50.9	51.0	51.1	51.1	51.2	51.2	51.2	
63.0	97.8	98.2	98.6	98.9	99.3	99.6	100.0	100.4	100.7	101.1	101.5	101.8	102.2	102.5	102.9	103.3	103.6	
	50.1	50.1	50.2	50.3	50.4	50.4	50.5	50.6	50.6	50.7	50.7	50.8	50.9	51.0	51.0	51.1	51.1	
63.5	98.3	98.7	99.0	99.4	99.7	100.1	100.5	100.8	101.2	101.6	101.9	102.3	102.6	103.0	103.4	103.7	104.1	
	50.0	50.1	50.1	50.2	50.3	50.3	50.4	50.5	50.5	50.6	50.6	50.7	50.8	50.9	50.9	51.0	51.0	
64.0	98.8	99.1	99.5	99.8	100.2	100.6	100.9	101.3	101.7	102.0	102.4	102.7	103.1	103.5	103.8	104.2	104.5	
	49.9	50.0	50.0	50.1	50.2	50.2	50.3	50.4	50.5	50.5	50.6	50.6	50.7	50.7	50.8	50.8	50.8	
64.5	99.2	99.6	99.9	100.3	100.7	101.0	101.4	101.8	102.1	102.5	102.8	103.2	103.6	103.9	104.3	104.6	105.0	
	49.8	49.9	49.9	50.0	50.1	50.1	50.2	50.2	50.3	50.3	50.4	50.4	50.5	50.6	50.6	50.7	50.7	
65.0	99.7	100.1	100.4	100.8	101.1	101.5	101.9	102.2	102.6	102.9	103.3	103.7	104.0	104.4	104.7	105.1	105.4	
	49.7	49.8	49.8	49.9	50.0	50.0	50.1	50.1	50.2	50.2	50.3	50.3	50.4	50.4	50.5	50.5	50.5	
65.5	100.2	100.5	100.9	101.3	101.6	102.0	102.3	102.7	103.0	103.4	103.8	104.1	104.5	104.8	105.2	105.5	105.9	
	49.6	49.7	49.7	49.8	49.8	49.9	49.9	49.9	50.0	50.0	50.1	50.1	50.2	50.3	50.3	50.4	50.4	
66.0	100.6	101.0	101.3	101.7	102.1	102.4	102.8	103.1	103.5	103.9	104.2	104.6	104.9	105.3	105.6	106.0	106.4	
	49.5	49.6	49.6	49.7	49.7	49.8	49.8	49.9	49.9	49.9	50.0	50.0	50.1	50.1	50.2	50.2	50.2	
66.5	101.1	101.5	101.8	102.2	102.5	102.9	103.2	103.6	104.0	104.3	104.7	105.0	105.4	105.7	106.1	106.5	106.8	
	49.4	49.5	49.5	49.6	49.6	49.6	49.7	49.7	49.7	49.8	49.8	49.9	49.9	50.0	50.0	50.0	50.1	
67.0	101.6	101.9	102.3	102.6	103.0	103.3	103.7	104.1	104.4	104.8	105.1	105.5	105.8	106.2	106.6	106.9	107.3	
	49.3	49.4	49.4	49.4	49.5	49.5	49.6	49.6	49.6	49.7	49.7	49.7	49.8	49.8	49.9	49.9	49.9	
67.5	102.0	102.4	102.7	103.1	103.5	103.8	104.2	104.5	104.9	105.2	105.6	105.9	106.3	106.7	107.0	107.4	107.7	
	49.2	49.2	49.3	49.3	49.4	49.4	49.4	49.5	49.5	49.5	49.6	49.6	49.6	49.7	49.7	49.7	49.7	
68.0	102.5	102.9	103.2	103.6	103.9	104.3	104.6	105.0	105.3	105.7	106.1	106.4	106.8	107.1	107.5	107.8	108.2	
	49.1	49.1	49.2	49.2	49.2	49.3	49.3	49.4	49.4	49.4	49.5	49.5	49.5	49.5	49.5	49.5	49.5	
68.5	103.0	103.3	103.7	104.0	104.4	104.7	105.1	105.5	105.8	106.2	106.5	106.9	107.2	107.6	107.9	108.3	108.6	
	49.0	49.0	49.0	49.1	49.1	49.1	49.2	49.2	49.2	49.3	49.3	49.3	49.3	49.3	49.4	49.4	49.4	
69.0	103.4	103.8	104.1	104.5	104.9	105.2	105.6	105.9	106.3	106.6	107.0	107.3	107.7	108.0	108.4	108.8	109.1	
	48.8	48.9	48.9	48.9	49.0	49.0	49.0	49.1	49.1	49.1	49.1	49.1	49.1	49.2	49.2	49.2	49.2	
69.5	103.9	104.3	104.6	105.0	105.3	105.7	106.0	106.4	106.7	107.1	107.4	107.8	108.2	108.5	108.9	109.2	109.6	
	48.7	48.7	48.8	48.8	48.8	48.8	48.8	48.9	48.9	48.9	48.9	48.9	49.0	49.0	49.0	49.0	49.0	
70.0	104.0	104.4	104.7	105.1	105.4	105.8	106.1	106.5	106.8	107.2	107.6	107.9	108.3	108.6	109.0	109.3	109.7	110.0
	48.6	48.6	48.6	48.6	48.7	48.7	48.7	48.7	48.7	48.7	48.7	48.8	48.8	48.8	48.8	48.8	48.8	
70.5	104.8	105.2	105.5	105.9	106.3	106.6	107.0	107.3	107.7	108.0	108.4	108.7	109.1	109.4	109.8	110.1	110.5	
	48.4	48.5	48.5	48.5	48.5	48.5	48.5	48.5	48.5	48.6	48.6	48.6	48.6	48.6	48.6	48.6	48.6	
71.0	105.3	105.7	106.0	106.4	106.7	107.1	107.4	107.8	108.1	108.5	108.8	109.2	109.6	109.9	110.3	110.6	111.0	
	48.3	48.3	48.3	48.3	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	48.4	
71.5	105.8	106.1	106.5	106.8	107.2	107.5	107.9	108.3	108.6	109.0	109.3	109.7	110.0	110.4	110.7	111.1	111.4	
	48.1	48.2	48.2	48.2	48.2	48.2	48.2	48.2	48.2	48.2	48.2	48.2	48.2	48.2	48.2	48.2	48.2	
72.0	106.3	106.6	107.0	107.3	107.7	108.0	108.4	108.7	109.1	109.4	109.8	110.1	110.5	110.9	111.2	111.6	111.9	
	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	
72.5	106.7	107.1	107.4	107.8	108.1	108.5	108.8	109.2	109.6	109.9	110.3	110.6	111.0	111.3	111.7	112.0	112.4	
	47.8	47.8	47.8	47.8	47.9	47.9	47.9	47.9	47.9	47.9	47.9	47.9	47.9	47.9	47.9	47.9	47.9	
73.0	107.2	107.6	107.9	108.3	108.6	109.0	109.3	109.7	110.0	110.4	110.7	111.1	111.4	111.8	112.2	112.5	112.9	
	47.7	47.7	47.7	47.7	47.7	47.7	47.7	47.7	47.7	47.7	47.7	47.7	47.7	47.7	47.7	47.7	47.7	
73.5	107.7	108.0	108.4	108.7	109.1	109.4	109.8	110.2	110.5	110.9	111.2	111.6	111.9	112.3	112.6	113.0	113.3	
	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	
74.0	108.2	108.5	108.9	109.2	109.6	109.9	110.3	110.6	111.0	111.3	111.7	112.1	112.4	112.8	113.1	113.5	113.8	
	47.3	47.3	47.3	47.3	47.3	47.3	47.3	47.3	47.3	47.3	47.3	47.3	47.3	47.3	47.2	47.2	47.1	
74.5	108.6	109.0	109.3	109.7	110.1	110.4	110.8	111.1	111.5	111.8	112.2	112.5	112.9	113.2	113.6	114.0	114.3	
	47.2	47.2	47.2	47.2	47.1	47.1	47.1	47.1	47.1	47.1	47.1	47.1	47.1	47.0	47.0	46.9	46.9	
75.0	109.1	109.5	109.8	110.2	110.5	110.9	111.2	111.6	112.0	112.3	112.7	113.0	113.4	113.7	114.1	114.4	114.8	
	47.0	47.0	47.0	47.0	47.0	46.9	46.9	46.9	46.9	46.9	46.8	46.8	46.8	46.7	46.7	46.7	46.6	
75.5	109.6	110.0	110.3	110.7	111.0	111.4	111.7	112.1	112.4	112.8	113.2	113.5	113.9	114.2	114.6	114.9	115.3	

SCAN NADIR ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) FOR BETA=45.0DEG

## SPIN ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) AT THE HORIZON FOR BETA=45.0DEG

	24.00	24.25	24.50	24.75	25.00	25.25	25.50	25.75	26.00	26.25	26.50	26.75	27.00	27.25	27.50	27.75	28.00
80.0	114.1	114.4	114.8	115.1	115.5	115.9	116.2	116.6	116.9	117.3	117.7	118.0	118.4	118.8	119.1	119.5	119.9
	45.0	44.9	44.9	44.8	44.8	44.7	44.7	44.6	44.5	44.5	44.4	44.3	44.3	44.2	44.1	44.1	44.0
80.5	114.6	114.9	115.3	115.7	116.0	116.4	116.7	117.1	117.5	117.8	118.2	118.6	118.9	119.3	119.7	120.0	120.4
	44.7	44.7	44.6	44.6	44.5	44.5	44.4	44.3	44.3	44.2	44.1	44.1	44.0	43.9	43.9	43.8	43.7
81.0	115.1	115.4	115.8	116.2	116.5	116.9	117.3	117.6	118.0	118.4	118.7	119.1	119.4	119.8	120.2	120.6	120.9
	44.5	44.5	44.4	44.3	44.3	44.2	44.1	44.1	44.0	43.9	43.9	43.8	43.7	43.6	43.5	43.4	
81.5	115.6	116.0	116.3	116.7	117.1	117.4	117.8	118.1	118.5	118.9	119.2	119.6	120.0	120.3	120.7	121.1	121.5
	44.3	44.2	44.1	44.1	44.0	43.9	43.9	43.8	43.7	43.7	43.6	43.5	43.4	43.3	43.2	43.1	
82.0	116.1	116.5	116.9	117.3	117.6	117.9	118.3	118.7	119.0	119.4	119.8	120.1	120.5	120.9	121.3	121.6	122.0
	44.0	44.0	43.9	43.8	43.8	43.7	43.6	43.5	43.5	43.4	43.3	43.2	43.1	43.0	43.0	42.9	42.8
82.5	116.6	117.0	117.4	117.7	118.1	118.5	118.8	119.2	119.6	119.9	120.3	120.7	121.1	121.4	121.8	122.2	122.5
	43.8	43.7	43.6	43.6	43.5	43.4	43.3	43.3	43.2	43.1	43.0	42.9	42.8	42.7	42.6	42.5	
83.0	117.2	117.5	117.9	118.3	118.6	119.0	119.4	119.8	120.1	120.5	120.9	121.2	121.6	122.0	122.4	122.7	123.1
	43.5	43.4	43.4	43.3	43.2	43.1	43.0	42.9	42.8	42.7	42.6	42.5	42.4	42.3	42.2	42.1	
83.5	117.7	118.1	118.4	118.8	119.2	119.6	119.9	120.3	120.7	121.0	121.4	121.8	122.2	122.5	122.9	123.3	123.7
	43.3	43.2	43.1	43.0	42.9	42.9	42.8	42.7	42.6	42.5	42.4	42.3	42.2	42.1	42.0	41.9	41.8
84.0	118.2	118.6	119.0	119.4	119.7	120.1	120.5	120.8	121.2	121.6	122.0	122.3	122.7	123.1	123.5	123.8	124.2
	43.0	42.9	42.8	42.7	42.7	42.6	42.5	42.4	42.3	42.2	42.1	42.0	41.9	41.8	41.7	41.6	41.5
84.5	118.8	119.2	119.5	119.9	120.3	120.6	121.0	121.4	121.8	122.1	122.5	122.9	123.3	123.7	124.0	124.4	124.8
	42.7	42.6	42.5	42.5	42.4	42.3	42.2	42.2	42.1	42.0	41.9	41.8	41.7	41.6	41.5	41.4	41.1
85.0	119.3	119.7	120.1	120.5	120.8	121.2	121.6	122.0	122.3	122.7	123.1	123.5	123.8	124.2	124.6	125.0	125.4
	42.4	42.3	42.3	42.2	42.1	42.0	41.9	41.8	41.7	41.6	41.5	41.3	41.2	41.1	41.0	40.9	40.8
85.5	119.9	120.3	120.6	121.0	121.4	121.8	122.1	122.5	122.9	123.3	123.7	124.0	124.4	124.8	125.2	125.6	126.0
	42.2	42.1	42.0	41.9	41.8	41.7	41.6	41.5	41.5	41.3	41.2	41.1	40.9	40.8	40.7	40.5	40.4
86.0	120.4	120.8	121.2	121.6	122.0	122.3	122.7	123.1	123.5	123.9	124.2	124.6	125.0	125.4	125.8	126.2	126.6
	41.9	41.8	41.7	41.6	41.5	41.3	41.2	41.1	41.0	40.9	40.8	40.7	40.5	40.4	40.2	40.0	
86.5	121.0	121.4	121.8	122.1	122.5	122.9	123.3	123.7	124.1	124.4	124.8	125.2	125.6	126.0	126.4	126.8	127.2
	41.6	41.5	41.4	41.2	41.1	41.0	40.9	40.8	40.7	40.6	40.4	40.3	40.2	40.1	39.9	39.8	39.7
87.0	121.6	122.0	122.3	122.7	123.1	123.5	123.9	124.3	124.6	125.0	125.4	125.8	126.2	126.6	127.0	127.4	127.8
	41.3	41.1	41.0	40.9	40.8	40.7	40.6	40.5	40.3	40.2	40.1	40.0	39.8	39.7	39.6	39.4	39.3
87.5	122.1	122.5	122.9	123.3	123.7	124.1	124.5	124.8	125.2	125.6	126.0	126.4	126.8	127.2	127.6	128.0	128.4
	40.9	40.8	40.7	40.6	40.5	40.4	40.2	40.1	40.0	39.9	39.7	39.6	39.5	39.3	39.2	39.0	38.9
88.0	122.7	123.1	123.5	123.9	124.3	124.7	125.0	125.4	125.8	126.2	126.6	127.0	127.4	127.8	128.2	128.6	129.0
	40.6	40.5	40.4	40.3	40.1	40.0	39.9	39.8	39.6	39.5	39.4	39.3	39.1	38.9	38.8	38.6	38.5
88.5	123.3	123.7	124.1	124.5	124.9	125.3	125.7	126.0	126.4	126.8	127.2	127.6	128.0	128.4	128.8	129.2	129.6
	40.3	40.2	40.1	39.9	39.8	39.7	39.5	39.4	39.3	39.1	39.0	38.8	38.7	38.5	38.4	38.2	38.1
89.0	123.9	124.3	124.7	125.1	125.5	125.9	126.3	126.7	127.1	127.5	127.9	128.3	128.7	129.1	129.5	129.9	130.3
	40.0	39.8	39.7	39.6	39.4	39.3	39.2	39.0	38.9	38.7	38.6	38.4	38.3	38.1	38.0	37.8	37.7
89.5	124.5	124.9	125.3	125.7	126.1	126.5	126.9	127.3	127.7	128.1	128.5	128.9	129.3	129.7	130.1	130.5	130.9
	39.6	39.5	39.4	39.2	39.1	38.9	38.8	38.7	38.5	38.4	38.2	38.0	37.9	37.7	37.6	37.4	37.2
90.0	125.1	125.5	125.9	126.3	126.7	127.1	127.5	127.9	128.3	128.7	129.1	129.5	129.9	130.4	130.8	131.2	131.6
	39.3	39.1	39.0	38.9	38.7	38.6	38.4	38.3	38.1	38.0	37.8	37.6	37.5	37.3	37.1	37.0	36.8
90.5	125.7	126.1	126.5	126.9	127.3	127.7	128.1	128.5	129.0	129.4	129.8	130.2	130.6	131.0	131.4	131.9	132.3
	38.9	38.8	38.6	38.5	38.3	38.2	38.0	37.9	37.7	37.6	37.4	37.2	37.1	36.9	36.7	36.5	36.3
91.0	126.4	126.8	127.2	127.6	128.0	128.4	128.8	129.2	129.6	130.0	130.4	130.8	131.3	131.7	132.1	132.5	133.0
	38.6	38.4	38.3	38.1	38.0	37.8	37.6	37.5	37.3	37.1	37.0	36.8	36.6	36.4	36.3	36.1	35.9
91.5	127.0	127.4	127.8	128.2	128.6	129.0	129.4	129.7	130.0	130.7	131.1	131.5	131.9	132.4	132.8	133.2	133.7
	38.2	38.0	37.9	37.7	37.6	37.4	37.2	37.1	36.9	36.7	36.5	36.4	36.2	36.0	35.8	35.6	35.4
92.0	127.6	128.0	128.4	128.8	129.3	129.7	130.1	130.5	130.9	131.4	131.8	132.2	132.6	133.1	133.5	133.9	134.4
	37.8	37.7	37.5	37.3	37.2	37.0	36.8	36.6	36.5	36.3	36.1	35.9	35.7	35.5	35.3	35.1	34.9
92.5	128.3	128.7	129.1	129.5	129.9	130.4	130.8	131.2	131.6	132.0	132.5	132.9	133.3	133.8	134.2	134.6	135.1
	37.4	37.3	37.1	36.9	36.7	36.6	36.4	36.2	36.0	35.8	35.6	35.4	35.2	35.0	34.8	34.6	34.4
93.0	128.9	129.3	129.8	130.2	130.6	131.0	131.5	131.9	132.3	132.7	133.2	133.6	134.1	134.5	134.9	135.4	135.8
	37.0	36.8	36.7	36.5	36.3	36.1	36.0	35.8	35.6	35.4	35.2	35.0	34.8	34.6	34.4	34.1	33.9
93.5	129.6	130.0	130.4	130.9	131.3	131.7	132.2	132.6	133.0	133.5	133.9	134.3	134.8	135.2	135.7	136.1	136.6
	36.6	36.4	36.3	36.1	35.9	35.7	35.5	35.3	35.1	34.9	34.7	34.5	34.3	34.1	33.8	33.6	33.4
94.0	130.3	130.7	131.1	131.5	132.0	132.4	132.9	133.3	133.7	134.2	134.6	135.1	135.5	136.0	136.4	136.9	137.3
	36.2	36.0	35.8	35.6	35.4	35.2	35.0	34.8	34.6	34.4	34.2	34.0	33.8	33.6	33.3	33.1	32.9
94.5	131.0	131.4	131.8	132.3	132.7	133.1	133.6	134.0	134.5	134.9	135.4	135.8	136.3	136.7	137.2	137.7	138.1
	35.8	35.6	35.4	35.2	35.0	34.8	34.6	34.4	34.2	33.9	33.7	33.5	33.3	33.0	32.8	32.6	32.3
95.0	131.7	132.1	132.5	133.0	133.4	133.9	134.3	134.8	135.2	135.7	136.1	136.6	137.1	137.5	138.0	138.5	138.9
	35.3	35.1	34.9	34.7	34.5	34.3	34.1	33.9	33.7	33.5	33.3	33.2	32.7	32.5	32.2	31.7	31.1
95.5	132.4	132.8	133.3	133.7	134.2	134.6	135.1	135.5	136.0	136.4	136.9	137.4					

SCAN nadir angle (upper) and scan horizontal angle (lower) for beta=45.0deg

SPIN ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) AT THE HORIZON FOR BETA=45.0DEG

Table II  
 $\beta = 70 \text{ deg}$

®

SCAN NADIR ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) FOR BETA=70.0DEG

## SPIN ANGLE (UPPER) AND SCAN . HORIZONTAL ANGLE (LOWER) AT THE HORIZON FOR BETA=70.0DEG

	24.00	24.25	24.50	24.75	25.00	25.25	25.50	25.75	26.00	26.25	26.50	26.75	27.00	27.25	27.50	27.75	28.00
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4.0	180.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4.5	153.1	161.1	180.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5.0	143.7	148.7	154.6	162.1	180.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5.5	137.4	141.3	145.5	150.3	155.8	163.0	180.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6.0	132.7	135.9	139.4	143.1	147.1	151.6	156.9	163.7	180.0	0.	0.	0.	0.	0.	0.	0.	0.
6.5	129.0	131.8	134.7	137.8	141.1	144.6	148.5	152.8	157.9	164.4	180.0	0.	0.	0.	0.	0.	0.
7.0	126.0	128.5	131.1	133.7	136.4	139.5	142.7	146.0	149.7	153.9	158.7	165.0	180.0	0.	0.	0.	0.
7.5	123.5	125.7	128.1	130.4	132.9	135.5	138.2	141.0	144.0	147.3	150.8	154.8	159.5	165.6	180.0	0.	0.
8.0	121.4	123.4	125.5	127.7	129.9	132.2	134.6	137.1	139.7	142.4	145.3	148.4	151.8	155.7	160.2	166.1	180.0
8.5	119.5	121.4	123.4	125.4	127.4	129.5	131.6	133.8	136.1	138.5	141.0	143.6	146.4	149.4	152.8	156.5	160.8
9.0	118.0	119.7	121.5	123.4	125.2	127.1	129.1	131.1	133.2	135.3	137.5	139.8	142.2	144.8	147.5	150.4	153.6
9.5	116.6	118.2	119.9	121.6	123.4	125.1	126.9	128.8	130.7	132.6	134.6	136.6	138.8	141.0	143.3	145.8	148.4
10.0	115.4	116.9	118.5	120.1	121.7	123.4	125.0	126.7	128.5	130.3	132.1	134.0	135.9	137.9	140.0	142.1	144.4
10.5	114.3	115.8	117.2	118.7	120.3	121.8	123.4	125.0	126.6	128.2	129.9	131.6	133.4	135.2	137.1	139.0	141.1
11.0	113.3	114.7	116.1	117.5	119.0	120.4	121.9	123.4	124.9	126.5	128.0	131.3	132.9	134.7	136.4	138.2	140.9
11.5	112.5	113.8	115.1	116.5	117.8	119.2	120.6	122.0	123.4	124.9	126.4	127.8	129.4	130.9	132.5	134.1	135.8
12.0	111.7	112.9	114.2	115.5	116.8	118.1	119.4	120.8	122.1	123.5	124.9	126.3	127.7	129.1	130.6	132.1	133.7
12.5	111.0	112.2	113.4	114.6	115.9	117.1	118.4	119.6	120.9	122.2	123.5	124.8	126.2	127.6	128.9	130.4	131.8
13.0	110.3	111.5	112.7	113.8	115.0	116.2	117.4	118.6	119.8	121.1	122.3	123.6	124.8	126.1	127.4	128.8	130.1
13.5	109.8	110.9	112.0	113.1	114.2	115.4	116.5	117.7	118.8	120.0	121.2	122.4	123.6	124.8	126.1	127.3	128.6
14.0	109.2	110.3	111.4	112.4	113.5	114.6	115.7	116.8	117.9	119.1	120.2	121.3	122.5	123.7	124.8	126.0	127.3
14.5	108.7	109.8	110.8	111.8	112.9	113.9	115.0	116.0	117.0	118.2	119.3	120.4	121.5	122.6	123.7	124.9	126.0
15.0	108.3	109.3	110.3	111.3	112.3	113.3	114.3	115.3	116.4	117.4	118.4	119.5	120.6	121.6	122.7	123.8	124.9
15.5	107.9	108.9	110.8	111.7	112.7	113.7	114.7	115.7	116.7	117.7	118.7	119.7	120.7	121.8	122.8	123.9	124.9
16.0	107.5	108.4	109.4	110.3	111.2	112.2	113.1	114.1	115.0	116.0	117.0	117.9	118.9	119.9	120.9	121.9	122.9
16.5	107.2	108.1	109.0	109.9	110.8	111.7	112.6	113.5	114.4	115.4	116.3	117.2	118.2	119.1	120.1	121.1	122.0
17.0	106.9	107.7	108.6	109.5	110.4	111.2	112.1	113.0	113.9	114.8	115.7	116.6	117.5	118.4	119.4	120.3	121.2
17.5	106.6	107.4	108.3	109.1	110.0	110.8	111.7	112.5	113.4	114.3	115.1	116.0	116.9	117.8	118.7	119.6	120.5
18.0	106.3	107.1	107.9	108.6	109.6	110.4	111.2	112.1	112.9	113.8	114.6	115.5	116.3	117.2	118.0	118.9	119.8
18.5	106.0	106.8	107.6	108.4	109.2	110.0	110.9	111.7	112.5	113.3	114.1	114.9	115.8	116.6	117.4	118.3	119.1
19.0	105.8	106.6	107.4	108.1	108.9	109.7	110.5	111.3	112.1	112.9	113.7	114.5	115.3	116.1	116.9	117.7	118.5
19.5	105.6	106.4	107.1	107.9	108.6	108.6	109.4	110.2	110.9	111.7	112.5	113.2	114.0	114.8	115.6	116.4	117.2

## SCAN NADIR ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) FOR BETA=70.0DEG

	180	170	160	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10	0
20.0	50.0	50.4	51.4	53.1	55.4	58.1	61.2	64.4	67.8	71.3	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	167.8	155.7	144.0	132.8	122.0	111.7	101.8	92.2	82.9	0.	0.	0.	0.	0.	0.	0.	0.	0.
20.5	49.5	49.9	51.0	52.7	55.1	57.9	61.0	64.3	67.8	71.3	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	167.7	155.6	143.8	132.6	121.8	111.5	101.6	92.0	82.7	0.	0.	0.	0.	0.	0.	0.	0.	0.
21.0	49.0	49.4	50.5	52.3	54.7	57.6	60.8	64.2	67.8	71.4	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	167.6	155.4	143.5	132.3	121.5	111.2	101.4	91.8	82.6	0.	0.	0.	0.	0.	0.	0.	0.	0.
21.5	48.5	48.9	50.1	51.9	54.4	57.3	60.6	64.2	67.8	71.4	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	167.5	155.2	143.3	132.0	121.2	111.0	101.1	91.6	82.4	0.	0.	0.	0.	0.	0.	0.	0.	0.
22.0	48.0	48.4	49.6	51.5	54.1	57.1	60.5	64.1	67.8	71.5	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	167.4	155.0	143.1	131.8	121.0	110.7	100.9	91.4	82.2	0.	0.	0.	0.	0.	0.	0.	0.	0.
22.5	47.5	47.9	49.2	51.1	53.7	56.8	60.3	64.0	67.8	71.6	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	167.3	154.9	142.9	131.5	120.7	110.4	100.6	91.2	82.1	0.	0.	0.	0.	0.	0.	0.	0.	0.
23.0	47.0	47.4	48.7	50.7	53.4	56.6	60.1	63.9	67.8	71.6	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	167.2	154.7	142.6	131.2	120.4	110.2	100.4	91.0	81.9	0.	0.	0.	0.	0.	0.	0.	0.	0.
23.5	46.5	46.9	48.3	50.3	53.1	56.3	59.9	63.8	67.7	71.7	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	167.1	154.5	142.4	130.9	120.1	109.9	100.2	90.8	81.7	0.	0.	0.	0.	0.	0.	0.	0.	0.
24.0	46.0	46.5	47.8	50.0	52.8	56.1	59.8	63.7	67.7	71.8	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	167.0	154.3	142.1	130.6	119.8	109.6	99.9	90.6	81.6	0.	0.	0.	0.	0.	0.	0.	0.	0.
24.5	45.5	46.0	47.4	49.6	52.4	55.8	59.6	63.6	67.7	71.9	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	166.9	154.1	141.9	130.4	119.5	109.3	99.7	90.4	81.4	0.	0.	0.	0.	0.	0.	0.	0.	0.
25.0	45.0	45.5	46.9	49.2	52.1	55.6	59.4	63.5	67.7	71.9	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	166.8	153.9	141.6	130.1	119.2	109.1	99.4	90.2	81.3	0.	0.	0.	0.	0.	0.	0.	0.	0.
25.5	44.5	45.0	46.5	48.8	51.8	55.3	59.3	63.4	67.7	72.0	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	166.7	153.7	141.3	129.8	118.9	108.8	99.2	90.0	81.1	0.	0.	0.	0.	0.	0.	0.	0.	0.
26.0	44.0	44.5	46.0	48.4	51.5	55.1	59.1	63.4	67.7	72.1	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	166.5	153.5	141.1	129.5	118.6	108.5	98.9	89.8	80.9	0.	0.	0.	0.	0.	0.	0.	0.	0.
26.5	43.5	44.0	45.6	48.0	51.2	54.9	59.0	63.3	67.7	72.2	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	166.4	153.3	140.8	129.1	118.3	108.2	98.7	89.6	80.8	0.	0.	0.	0.	0.	0.	0.	0.	0.
27.0	43.0	43.5	45.1	47.6	50.8	54.6	58.8	63.2	67.7	72.3	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	166.3	153.0	140.5	128.8	118.0	107.9	98.4	89.4	80.6	0.	0.	0.	0.	0.	0.	0.	0.	0.
27.5	42.5	43.1	44.7	47.2	50.5	54.4	58.6	63.1	67.7	72.3	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	166.2	152.8	140.2	128.5	117.7	107.6	98.2	89.2	80.5	0.	0.	0.	0.	0.	0.	0.	0.	0.
28.0	42.0	42.6	44.2	46.8	50.2	54.2	58.5	63.1	67.8	72.4	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	166.0	152.6	139.9	128.2	117.4	107.4	97.9	89.0	80.3	0.	0.	0.	0.	0.	0.	0.	0.	0.
28.5	41.5	42.1	43.8	46.5	49.9	53.9	58.3	63.0	67.8	72.5	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	165.9	152.3	139.6	127.9	117.1	107.1	97.7	88.8	80.1	0.	0.	0.	0.	0.	0.	0.	0.	0.
29.0	41.0	41.6	43.3	46.1	49.6	53.7	58.2	62.9	67.8	72.6	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	165.8	152.1	139.3	127.5	116.7	106.8	97.4	88.6	80.0	0.	0.	0.	0.	0.	0.	0.	0.	0.
29.5	40.5	41.1	42.9	45.7	49.3	53.5	58.1	62.9	67.8	72.7	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	165.6	151.8	139.0	127.2	116.4	106.5	97.2	88.4	79.8	0.	0.	0.	0.	0.	0.	0.	0.	0.
30.0	40.0	40.6	42.5	45.3	49.0	53.3	57.9	62.6	67.8	72.8	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	165.5	151.6	138.6	126.8	116.1	106.2	96.9	88.2	79.7	0.	0.	0.	0.	0.	0.	0.	0.	0.
30.5	39.5	40.1	42.0	44.9	48.7	53.0	57.8	62.8	67.8	72.9	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	165.3	151.3	138.3	126.5	115.7	105.9	96.7	88.0	79.5	0.	0.	0.	0.	0.	0.	0.	0.	0.
31.0	39.0	39.7	41.6	44.6	48.4	52.8	57.6	62.7	67.8	73.0	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	165.2	151.0	138.0	126.1	115.4	105.6	96.4	87.8	79.4	0.	0.	0.	0.	0.	0.	0.	0.	0.
31.5	38.5	39.2	41.1	44.2	48.1	52.6	57.5	62.6	67.9	73.0	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	165.0	150.8	137.6	125.8	115.0	105.3	96.2	87.6	79.2	0.	0.	0.	0.	0.	0.	0.	0.	0.
32.0	38.0	38.7	40.7	43.8	47.8	52.4	57.4	62.6	67.9	73.1	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	164.9	150.5	137.3	125.4	114.7	104.9	95.9	87.3	79.1	0.	0.	0.	0.	0.	0.	0.	0.	0.
32.5	37.5	38.2	40.3	43.5	47.5	52.2	57.3	62.5	67.9	73.2	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	164.7	150.2	136.9	125.0	114.3	104.6	95.6	87.1	78.9	0.	0.	0.	0.	0.	0.	0.	0.	0.
33.0	37.0	37.7	39.8	43.1	47.2	52.0	57.1	62.5	67.9	73.3	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	164.5	149.9	136.6	124.6	114.0	104.3	95.4	86.9	78.8	0.	0.	0.	0.	0.	0.	0.	0.	0.
33.5	36.5	37.3	39.4	42.7	47.0	51.8	57.0	62.4	68.0	73.4	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	164.4	149.6	136.2	124.3	113.6	104.0	95.1	86.7	78.6	0.	0.	0.	0.	0.	0.	0.	0.	0.
34.0	36.0	36.8	39.0	42.4	46.7	51.6	56.9	62.4	68.0	73.5	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	164.2	149.3	135.8	123.9	113.3	103.7	94.9	86.5	78.5	0.	0.	0.	0.	0.	0.	0.	0.	0.
34.5	35.5	36.3	38.6	42.0	46.4	51.4	56.8	62.4	68.0	73.6	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	164.0	149.0	135.5	123.5	112.9	103.4	94.6	86.3	78.4	0.	0.	0.	0.	0.	0.	0.	0.	0.
35.0	35.0	35.8	38.1	41.7	46.1	51.2	56.7	62.3	68.1	73.7	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	163.8	148.6	135.0	123.1	112.5	103.1	94.3	86.1	78.2	0.	0.	0.	0.	0.	0.	0.	0.	0.
35.5	34.5	35.3	37.7	41.3	45.9	51.0	56.5	62.3	68.1	73.8	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	163.6	148.3	134.6	122.7	112.2	102.7	94.1	85.9	78.1	0.	0.	0.	0.	0.	0.	0.	0.	0.
36.0	34.0	34.9	37.3	41.0	45.6	50.8	56.4	62.3	68.1	73.9	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	163.4	148.0	134.2	122.3	111.8	101.4	93.8	85.7	77.9	0.	0.	0.	0.	0.	0.	0.	0.	0.
36.5	33.5	34.4	36.9	40.6	45.3	50.6	56.3	62.2	68.2	74.0	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	163.2	147.6	133.8	121.8	111.4	102.1	93.6	85.5	77.8	0.	0.	0.	0.	0.	0.	0.	0.	0.
37.0	33.0	33.9	36.4	40.3	45.1	50.5	56.2	62.2</											

## SPIN ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) AT THE HORIZON FOR BETA=70.0DEG

	24.00	24.25	24.50	24.75	25.00	25.25	25.50	25.75	26.00	26.25	26.50	26.75	27.00	27.25	27.50	27.75	28.00
20.0	105.4	106.1	106.9	107.6	108.4	109.1	109.8	110.6	111.3	112.1	112.9	113.6	114.4	115.1	115.9	116.7	117.4
	97.4	98.1	98.8	99.5	100.2	101.0	101.7	102.4	103.1	103.9	104.6	105.4	106.1	106.9	107.6	108.4	109.2
20.5	105.2	105.9	106.7	107.4	108.1	108.8	109.6	110.3	111.0	111.7	112.5	113.2	114.0	114.7	115.4	116.2	116.9
	97.0	97.7	98.4	99.1	99.8	100.5	101.2	101.9	102.6	103.3	104.0	104.7	105.5	106.2	106.9	107.7	108.4
21.0	105.0	105.8	106.5	107.2	107.9	108.6	109.3	110.0	110.7	111.4	112.1	112.9	113.6	114.3	115.0	115.8	116.5
	96.6	97.3	98.0	98.6	99.3	100.0	100.7	101.4	102.0	102.7	103.4	104.1	104.8	105.6	106.3	107.0	107.7
21.5	104.9	105.6	106.3	107.0	107.6	108.3	109.0	110.4	111.1	111.8	112.5	113.2	113.9	114.6	115.3	116.1	
	96.2	96.9	97.5	98.2	98.9	99.5	100.2	100.9	101.5	102.2	102.9	103.6	104.2	104.9	105.6	106.3	107.0
22.0	104.7	105.4	106.1	106.8	107.4	108.1	108.8	109.5	110.1	110.8	111.5	112.2	112.9	113.6	114.3	115.0	115.6
	95.9	96.5	97.2	97.8	98.4	99.1	99.7	100.4	101.0	101.7	102.3	103.0	103.7	104.3	105.0	105.7	106.4
22.5	104.6	105.3	105.9	106.6	107.2	107.9	108.6	109.2	109.9	110.6	111.2	111.9	112.6	113.2	113.9	114.6	115.3
	95.5	96.2	96.8	97.4	98.0	98.7	99.3	99.9	100.6	101.2	101.8	102.5	103.1	104.4	105.1	105.7	
23.0	104.5	105.1	105.8	106.4	107.1	107.7	108.4	109.0	109.7	110.3	111.0	111.6	112.3	112.9	113.6	114.2	114.9
	95.2	95.8	96.4	97.0	97.6	98.2	98.9	99.5	100.1	100.7	101.3	102.0	102.6	103.2	103.9	104.5	105.1
23.5	104.4	105.0	105.6	106.3	106.9	107.5	108.2	108.8	109.4	110.1	110.7	111.4	112.0	112.6	113.3	113.9	114.6
	94.9	95.5	96.1	96.6	97.2	97.8	98.4	99.0	99.6	100.2	100.8	101.5	102.1	102.7	103.3	103.9	104.6
24.0	104.3	104.9	105.5	106.1	106.8	107.4	108.0	108.6	109.2	109.9	110.5	111.1	111.7	112.4	113.0	113.6	114.3
	94.6	95.1	95.7	96.3	96.9	97.4	98.0	98.6	99.2	99.8	100.4	101.0	101.6	102.2	102.8	103.4	104.0
24.5	104.2	104.8	105.4	106.0	106.6	107.2	107.8	108.4	109.0	109.7	110.3	110.9	111.5	112.1	112.7	113.3	114.0
	94.3	94.8	95.4	95.9	96.5	97.1	97.6	98.2	98.8	99.4	99.9	100.5	101.1	101.7	102.3	102.9	103.5
25.0	104.1	104.7	105.3	105.9	106.5	107.1	107.7	108.3	108.9	109.5	110.1	110.7	111.3	111.9	112.5	113.1	113.7
	94.0	94.5	95.0	95.6	96.1	96.7	97.3	97.8	98.4	98.9	99.5	100.1	100.6	101.2	101.8	102.3	
25.5	104.0	104.6	105.2	105.8	106.4	106.9	107.5	108.1	108.7	109.3	109.9	110.5	111.0	111.6	112.2	112.8	113.4
	93.7	94.2	94.7	95.3	95.8	96.3	96.9	97.4	98.0	98.5	99.1	99.6	100.2	100.7	101.3	101.8	102.4
26.0	104.0	104.5	105.1	105.7	106.2	106.8	107.4	108.0	108.5	109.1	109.7	110.3	110.8	111.4	112.0	112.6	113.2
	93.4	93.9	94.4	94.9	95.5	96.0	96.5	97.0	97.6	98.1	98.7	99.2	99.7	100.3	100.8	101.4	101.9
26.5	103.9	104.5	105.0	105.6	106.1	106.7	107.3	107.8	108.4	109.0	109.5	110.1	110.7	111.2	111.8	112.4	112.9
	93.1	93.6	94.1	94.6	95.1	95.6	96.2	96.7	97.2	97.7	98.2	98.8	99.3	99.8	100.4	101.9	
27.0	103.8	104.4	104.9	105.5	106.0	106.6	107.1	107.7	108.3	108.8	109.4	109.9	110.5	111.0	111.6	112.2	112.7
	92.8	93.3	93.8	94.3	94.8	95.3	95.8	96.3	96.8	97.3	97.9	98.4	98.9	99.4	99.9	100.4	101.0
27.5	103.8	104.3	104.9	105.4	106.0	106.5	107.0	107.6	108.1	108.7	109.2	109.8	110.3	110.9	111.4	112.0	112.5
	92.5	93.0	93.5	94.0	94.5	95.0	95.5	96.0	96.5	97.0	97.5	98.0	98.5	99.0	99.5	100.0	
28.0	103.7	104.3	104.8	105.3	105.9	106.4	106.9	107.5	108.0	108.5	109.1	109.6	110.2	110.7	111.2	111.8	112.3
	92.3	92.8	93.2	93.7	94.2	94.7	95.2	95.6	96.1	96.6	97.1	97.6	98.1	98.6	99.1	99.6	100.1
28.5	103.7	104.2	104.7	105.3	105.8	106.3	106.8	107.4	107.9	108.4	109.0	109.5	110.0	110.5	111.1	111.6	112.1
	92.0	92.5	93.0	93.4	93.9	94.4	94.8	95.3	95.8	96.3	96.7	97.2	97.7	98.2	98.7	99.2	99.6
29.0	103.7	104.2	104.7	105.2	105.7	106.2	106.8	107.3	107.8	108.3	108.8	109.4	109.9	110.4	110.9	111.4	112.0
	91.8	92.2	92.7	93.1	93.6	94.1	94.5	95.0	95.5	95.9	96.4	96.9	97.3	97.8	98.3	98.7	99.2
29.5	103.6	104.1	104.6	105.2	105.7	106.2	106.7	107.2	107.8	108.2	108.7	109.2	109.7	110.3	110.8	111.3	111.8
	91.5	92.0	92.4	92.9	93.3	93.8	94.2	94.7	95.1	95.6	96.0	96.5	97.0	97.4	97.9	98.3	98.8
30.0	103.6	104.1	104.6	105.1	105.6	106.1	106.6	107.1	107.6	108.1	108.6	109.1	109.6	110.1	110.6	111.1	111.6
	91.3	91.7	92.2	92.6	93.0	93.5	93.9	94.4	94.8	95.2	95.7	96.1	96.6	97.0	97.5	98.0	98.4
30.5	103.6	104.1	104.6	105.1	105.6	106.1	106.5	107.0	107.5	108.0	108.5	109.0	109.5	110.0	110.5	111.0	111.5
	91.0	91.5	91.9	92.3	92.8	93.2	93.6	94.1	94.5	94.9	95.4	95.8	96.2	96.7	97.1	97.6	
31.0	103.6	104.1	104.6	105.0	105.5	106.0	106.5	107.0	107.5	107.9	108.4	108.9	109.4	109.9	110.4	111.4	
	90.8	91.2	91.6	92.1	92.5	92.9	93.3	93.8	94.2	94.6	95.0	95.5	96.3	96.8	97.2	97.6	
31.5	103.6	104.0	104.5	105.0	105.5	106.0	106.4	106.9	107.4	107.9	108.4	108.8	109.3	109.8	110.3	110.8	111.2
	90.6	91.0	91.4	91.8	92.2	92.6	93.0	93.5	93.9	94.3	94.7	95.1	95.6	96.0	96.4	96.8	97.3
32.0	103.6	104.0	104.5	105.0	105.4	105.9	106.4	106.9	107.3	107.8	108.3	108.8	109.2	109.7	110.2	110.6	111.1
	90.3	90.7	91.1	91.6	92.0	92.4	92.8	93.2	93.6	94.0	94.4	94.8	95.2	95.6	96.1	96.5	96.9
32.5	103.5	104.0	104.5	104.9	105.4	105.9	106.3	106.8	107.3	107.7	108.2	108.7	109.1	109.6	110.1	110.5	111.0
	90.1	90.5	90.9	91.3	91.7	92.1	92.5	92.9	93.3	93.7	94.1	94.5	94.9	95.3	95.7	96.1	96.5
33.0	103.5	104.0	104.5	104.9	105.4	105.8	106.3	106.8	107.2	107.7	108.1	108.6	109.1	109.5	110.0	110.9	
	89.9	90.3	90.7	91.1	91.5	91.8	92.2	92.6	93.0	93.4	93.8	94.2	94.6	95.0	95.4	95.8	
33.5	103.6	104.0	104.5	104.9	105.4	105.8	106.3	106.7	107.2	107.6	108.1	108.5	109.0	109.4	109.9	110.4	
	89.7	90.1	90.4	90.8	91.2	91.6	92.0	92.3	92.7	93.1	93.5	93.9	94.3	94.7	95.0	95.4	
34.0	103.6	104.0	104.5	104.9	105.3	105.8	106.2	106.7	107.1	107.6	108.0	108.5	108.9	109.4	109.8	110.7	
	89.5	89.8	90.2	90.6	91.0	91.3	91.7	92.1	92.4	92.8	93.2	93.6	94.0	94.3	94.7	95.1	
34.5	103.6	104.0	104.5	104.9	105.3	105.8	106.2	106.7	107.1	107.6	108.0	108.4	108.9	109.3	109.8	110.2	
	89.2	89.6	90.0	90.3	90.7	91.0	91.4	91.7	92.1	92.4	92.8	93.2	93.6	94.0	94.4	94.8	
35.0	103.6	104.0	104.5	104.9	105.3	105.8	106.2	106.6	107.1	107.5	107.9	108.4	108.8	109.3	109.7	110.1	110.6
	89.0	89.4	89.7	90.1	90.5	90.8	91.2	91.5	91.9	92.3	92.6	93.0	93.4	93.7	94.1	94.5	94.8
35.5	103.6	104.0	104.5	104.9	105.3	105.8	106.										

## SCAN NADIR ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) FOR BETA=70.0DEG

	180	170	160	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10	0
40.0	30.0	31.0	33.9	38.3	43.6	49.4	55.7	62.1	68.5	74.8	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	161.5	144.9	130.7	118.8	108.6	99.8	91.7	84.1	76.8	0.	0.	0.	0.	0.	0.	0.	0.	0.
40.5	29.5	30.6	33.5	37.9	43.3	49.3	55.6	62.0	68.5	74.9	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	161.3	144.4	130.2	118.3	108.2	99.4	91.4	84.0	76.7	0.	0.	0.	0.	0.	0.	0.	0.	0.
41.0	29.0	30.1	33.1	37.6	43.1	49.1	55.5	62.0	68.5	75.0	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	161.0	144.0	129.7	117.8	107.8	99.1	91.2	83.8	76.6	0.	0.	0.	0.	0.	0.	0.	0.	0.
41.5	28.5	29.6	32.7	37.3	42.8	49.0	55.4	62.0	68.5	75.2	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	160.7	143.5	129.2	117.4	107.4	98.8	90.9	83.6	76.4	0.	0.	0.	0.	0.	0.	0.	0.	0.
42.0	28.0	29.1	32.3	37.0	42.6	48.8	55.4	62.0	68.7	75.3	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	160.4	143.1	128.7	116.9	107.0	98.4	90.6	83.4	76.3	0.	0.	0.	0.	0.	0.	0.	0.	0.
42.5	27.5	28.7	31.9	36.7	42.4	48.7	55.3	62.0	68.8	75.4	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	160.1	142.6	128.1	116.4	106.6	98.1	90.4	83.2	76.2	0.	0.	0.	0.	0.	0.	0.	0.	0.
43.0	27.0	28.2	31.5	36.4	42.2	48.5	55.2	62.0	68.8	75.5	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	159.8	142.1	127.6	115.9	106.2	97.7	90.1	83.0	76.1	0.	0.	0.	0.	0.	0.	0.	0.	0.
43.5	26.5	27.7	31.1	36.1	42.0	48.5	55.1	62.0	68.9	75.6	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	159.5	141.6	127.1	115.4	105.7	97.4	89.9	82.8	75.9	0.	0.	0.	0.	0.	0.	0.	0.	0.
44.0	26.0	27.3	30.7	35.8	41.7	48.3	55.1	62.0	68.9	75.8	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	159.1	141.1	126.6	114.9	105.3	97.0	89.6	82.6	75.8	0.	0.	0.	0.	0.	0.	0.	0.	0.
44.5	25.5	26.8	30.4	35.5	41.5	48.1	55.0	62.0	69.0	75.9	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	158.8	140.5	125.9	114.4	104.9	96.7	89.3	82.4	75.7	0.	0.	0.	0.	0.	0.	0.	0.	0.
45.0	25.0	26.3	30.0	35.2	41.3	48.0	55.0	62.0	69.1	76.0	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	158.4	140.0	125.4	113.9	104.4	96.3	89.1	82.2	75.6	0.	0.	0.	0.	0.	0.	0.	0.	0.
45.5	24.5	25.9	29.6	34.9	41.1	47.9	54.9	62.0	69.1	76.1	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	158.0	139.4	124.8	113.3	104.0	96.0	88.8	82.0	75.4	0.	0.	0.	0.	0.	0.	0.	0.	0.
46.0	24.0	25.4	29.2	34.6	40.9	47.8	54.9	62.0	69.2	76.3	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	157.6	138.8	124.2	112.8	103.6	95.6	88.5	81.8	75.3	0.	0.	0.	0.	0.	0.	0.	0.	0.
46.5	23.5	24.9	28.8	34.3	40.7	47.7	54.8	62.1	69.3	76.4	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	157.2	138.2	123.6	112.3	103.1	95.3	88.3	81.7	75.2	0.	0.	0.	0.	0.	0.	0.	0.	0.
47.0	23.0	24.5	28.5	34.1	40.6	47.5	54.8	62.1	69.4	76.5	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	156.8	137.6	123.0	111.7	102.7	94.9	88.0	81.5	75.1	0.	0.	0.	0.	0.	0.	0.	0.	0.
47.5	22.5	24.0	28.1	33.8	40.4	47.4	54.7	62.1	69.4	76.6	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	156.4	137.0	122.4	111.2	102.2	94.6	87.7	81.3	75.0	0.	0.	0.	0.	0.	0.	0.	0.	0.
48.0	22.0	23.6	27.7	33.5	40.2	47.3	54.7	62.1	69.5	76.8	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	155.9	136.3	121.7	110.6	101.8	94.2	87.5	81.7	74.9	0.	0.	0.	0.	0.	0.	0.	0.	0.
48.5	21.5	23.1	27.4	33.3	40.0	47.2	54.7	62.1	69.6	76.9	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	155.4	135.7	121.1	110.1	101.3	93.9	87.2	80.9	74.8	0.	0.	0.	0.	0.	0.	0.	0.	0.
49.0	21.0	22.7	27.0	33.0	39.9	47.1	54.6	62.2	69.7	77.0	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	154.9	135.0	120.4	109.5	100.9	93.5	86.9	80.7	74.6	0.	0.	0.	0.	0.	0.	0.	0.	0.
49.5	20.5	22.2	26.7	32.8	39.7	47.0	54.6	62.2	69.7	77.2	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	154.4	134.3	119.7	109.0	100.4	93.2	86.7	80.5	74.5	0.	0.	0.	0.	0.	0.	0.	0.	0.
50.0	20.0	21.8	26.3	32.5	39.5	47.0	54.6	62.2	69.8	77.3	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	153.9	133.6	119.1	108.4	109.9	92.8	86.4	80.4	74.4	0.	0.	0.	0.	0.	0.	0.	0.	0.
50.5	19.5	21.3	26.0	32.3	39.4	46.9	54.5	62.3	69.9	77.4	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	153.3	132.8	118.4	107.8	99.5	92.1	86.1	80.2	74.3	0.	0.	0.	0.	0.	0.	0.	0.	0.
51.0	19.0	20.9	25.6	32.0	39.2	46.8	54.5	62.3	70.0	77.6	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	152.7	132.1	117.7	107.2	99.0	92.1	85.9	80.0	74.2	0.	0.	0.	0.	0.	0.	0.	0.	0.
51.5	18.5	20.4	25.3	31.8	39.1	46.7	54.5	62.3	70.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	152.1	131.3	117.0	106.6	98.6	91.7	85.6	79.8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
52.0	18.0	20.0	25.0	31.6	38.9	46.6	54.5	62.4	70.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	151.5	130.5	116.2	106.0	98.1	91.4	85.4	79.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
52.5	17.5	19.5	24.7	31.4	38.8	46.6	54.5	62.4	70.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	150.8	129.6	115.5	105.4	97.6	91.0	85.1	79.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
53.0	17.0	19.1	24.3	31.2	38.7	46.5	54.5	62.5	70.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	150.1	128.8	114.8	104.8	97.2	90.7	84.8	79.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
53.5	16.5	18.7	24.0	30.9	38.3	46.4	54.5	62.5	70.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	149.4	127.9	114.0	104.2	96.7	90.3	84.6	79.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
54.0	16.0	18.0	23.7	30.7	38.4	46.4	54.5	62.5	70.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	148.6	127.0	113.2	103.6	96.2	90.0	84.3	78.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
54.5	15.5	17.8	23.4	30.6	38.3	46.3	54.5	62.6	70.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	147.8	126.1	112.4	103.0	95.7	89.6	84.1	78.8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
55.0	15.0	17.4	23.1	30.4	38.2	46.3	54.5	62.6	70.7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	146.9	125.2	111.7	102.4	95.3	89.2	83.8	78.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
55.5	14.5	17.0	22.9	30.2	38.1	46.2	54.5	62.7	70.8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	146.0	124.2	110.9	101.8	94.8	88.9	83.5	78.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
56.0	14.0	16.6	22.6	30.0	38.0	46.2	54.5	62.8	70.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	145.1	123.2	110.1	101.1	94.3	88.5	83.3	78.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
56.5	13.5	16.2	22.3	29.8	37.9	46.2	54.5	62.8	71.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	144.1	122.2	109.2	100.5	93.8	88.2	83.0	78.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
57.0	13.0	15.8	22.1	29.7	37.8	46.1	54.5	62.9	71.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	143.1	121.1	108.4															

## SPIN ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) AT THE HORIZON FOR BETA=70.0DEG

24.00	24.25	24.50	24.75	25.00	25.25	25.50	25.75	26.00	26.25	26.50	26.75	27.00	27.25	27.50	27.75	28.00	
40.0	103.9	104.3	104.6	105.0	105.4	105.8	106.2	106.6	107.0	107.4	107.8	108.1	108.5	108.9	109.3	109.7	110.1
	87.0	87.3	87.6	87.9	88.2	88.5	88.8	89.1	89.4	89.7	90.0	90.3	90.6	90.9	91.2	91.5	91.8
40.5	103.9	104.3	104.7	105.1	105.4	105.8	106.2	106.6	107.0	107.4	107.8	108.1	108.5	108.9	109.3	109.7	110.1
	86.8	87.1	87.4	87.7	88.0	88.3	88.6	88.9	89.1	89.4	89.7	90.0	90.3	90.6	90.9	91.2	91.5
41.0	103.9	104.3	104.7	105.1	105.5	105.9	106.2	106.6	107.0	107.4	107.8	108.1	108.5	108.9	109.3	109.7	110.0
	86.6	86.9	87.2	87.5	87.8	88.1	88.3	88.6	88.9	89.2	89.5	89.8	90.1	90.3	90.6	90.9	91.2
41.5	104.0	104.4	104.8	105.1	105.5	105.9	106.3	106.6	107.0	107.4	107.8	108.1	108.5	108.9	109.3	109.7	110.0
	86.5	86.7	87.0	87.3	87.6	87.8	88.1	88.4	88.7	89.0	89.2	89.5	89.8	90.1	90.4	90.7	90.9
42.0	104.0	104.4	104.8	105.2	105.5	105.9	106.3	106.7	107.0	107.4	107.8	108.2	108.5	108.9	109.3	109.7	110.0
	86.3	86.5	86.8	87.1	87.4	87.6	87.9	88.2	88.5	88.7	89.0	89.3	89.6	89.8	90.1	90.4	90.7
42.5	104.1	104.5	104.8	105.2	105.6	105.9	106.3	106.7	107.1	107.4	107.8	108.2	108.5	108.9	109.3	109.6	110.0
	86.1	86.4	86.6	86.9	87.2	87.4	87.7	88.0	88.2	88.5	88.8	89.0	89.3	89.6	89.8	90.1	90.4
43.0	104.1	104.5	104.9	105.2	105.6	106.0	106.3	106.7	107.1	107.4	107.8	108.2	108.5	108.9	109.3	109.6	110.0
	85.9	86.2	86.4	86.7	86.9	87.2	87.5	87.7	88.0	88.3	88.5	88.8	89.1	89.3	89.6	89.9	90.1
43.5	104.2	104.6	104.9	105.3	105.7	106.0	106.4	106.7	107.1	107.5	107.8	108.2	108.6	108.9	109.3	109.7	110.0
	85.7	86.0	86.2	86.5	86.7	87.0	87.3	87.5	87.8	88.0	88.3	88.6	88.8	89.1	89.3	89.6	89.9
44.0	104.3	104.6	105.0	105.3	105.7	106.1	106.4	106.8	107.1	107.5	107.9	108.2	108.6	108.9	109.3	109.7	110.0
	85.5	85.8	86.0	86.3	86.5	86.8	87.0	87.3	87.6	87.8	88.1	88.3	88.6	88.8	89.1	89.3	89.6
44.5	104.3	104.7	105.0	105.4	105.7	106.1	106.5	106.8	107.2	107.5	107.9	108.2	108.6	109.0	109.3	109.7	110.0
	85.3	85.6	85.8	86.1	86.3	86.6	86.8	87.1	87.3	87.6	87.8	88.1	88.3	88.6	88.8	89.1	89.3
45.0	104.4	104.7	105.1	105.4	105.8	106.1	106.5	106.9	107.2	107.6	107.9	108.3	108.6	109.0	109.3	109.7	110.0
	85.2	85.5	85.7	85.9	86.1	86.4	86.6	86.9	87.1	87.4	87.6	87.8	88.1	88.3	88.6	88.8	89.1
45.5	104.4	104.8	105.1	105.5	105.8	106.2	106.5	106.9	107.2	107.6	107.9	108.3	108.6	109.0	109.3	109.7	110.0
	85.0	85.2	85.5	85.7	85.9	86.2	86.4	86.7	87.0	87.3	87.6	87.9	88.1	88.3	88.6	88.8	89.1
46.0	104.5	104.8	105.2	105.5	105.8	106.2	106.6	106.9	107.3	107.6	108.0	108.3	108.7	109.0	109.4	109.7	110.1
	84.8	85.0	85.3	85.5	85.7	86.0	86.2	86.4	86.7	87.0	87.3	87.6	87.9	88.1	88.3	88.6	88.9
46.5	104.6	104.9	105.2	105.6	105.9	106.3	106.6	107.0	107.3	107.7	108.0	108.4	108.7	109.0	109.4	109.7	110.1
	84.6	84.9	85.1	85.3	85.5	85.8	86.0	86.2	86.5	86.7	86.9	87.2	87.4	87.6	87.8	88.1	88.3
47.0	104.6	105.0	105.3	105.7	106.0	106.3	106.7	107.0	107.4	107.7	108.0	108.4	108.7	109.1	109.4	109.8	110.1
	84.4	84.7	84.9	85.1	85.3	85.6	85.8	86.0	86.2	86.5	86.7	86.9	87.2	87.4	87.6	87.8	88.1
47.5	104.7	105.0	105.4	105.7	106.1	106.4	106.7	107.1	107.4	107.8	108.1	108.4	108.8	109.1	109.4	109.8	110.1
	84.3	84.5	84.7	84.9	85.1	85.4	85.6	85.8	86.0	86.3	86.5	86.7	86.9	87.1	87.4	87.6	87.8
48.0	104.8	104.8	105.4	105.8	106.1	106.4	106.8	107.1	107.5	107.8	108.1	108.5	108.8	109.1	109.5	109.8	110.2
	84.1	84.3	84.5	84.7	85.0	85.2	85.4	85.6	85.8	86.0	86.3	86.5	86.7	86.9	87.1	87.3	87.6
48.5	104.8	105.2	105.5	105.8	106.2	106.5	106.8	107.2	107.5	107.8	108.2	108.5	108.8	109.2	109.5	109.9	110.2
	83.9	84.1	84.3	84.5	84.8	85.0	85.2	85.4	85.6	85.8	86.0	86.2	86.5	86.7	86.9	87.1	87.3
49.0	104.9	105.2	105.6	105.9	106.2	106.6	106.9	107.2	107.6	107.9	108.2	108.6	108.9	109.2	109.6	109.9	110.2
	83.7	83.9	84.2	84.4	84.6	84.8	85.0	85.2	85.4	85.6	85.8	86.0	86.2	86.4	86.7	86.9	87.1
49.5	105.0	105.3	105.6	106.0	106.3	106.6	107.0	107.3	107.6	107.9	108.3	108.6	108.9	109.3	109.6	109.9	110.3
	83.6	83.8	84.0	84.2	84.4	84.6	84.8	85.0	85.2	85.4	85.6	85.8	86.0	86.2	86.4	86.6	86.8
50.0	105.0	105.4	105.7	106.0	106.4	106.7	107.0	107.3	107.7	108.0	108.3	108.7	109.7	109.3	109.6	110.0	110.3
	83.4	83.6	83.8	84.0	84.2	84.4	84.6	84.8	85.0	85.2	85.4	85.6	85.8	86.0	86.2	86.4	86.6
50.5	105.1	105.5	105.8	106.1	106.4	106.8	107.1	107.4	107.7	108.1	108.4	108.7	109.0	109.4	109.7	110.0	110.3
	83.2	83.4	83.6	83.8	84.0	84.2	84.4	84.6	84.8	85.0	85.2	85.4	85.6	85.8	86.0	86.2	86.5
51.0	105.2	105.5	105.8	106.2	106.5	106.8	107.1	107.4	107.7	108.1	108.4	108.8	109.1	109.4	109.7	110.1	110.4
	83.0	83.2	83.4	83.6	83.8	84.0	84.2	84.4	84.6	84.8	85.0	85.2	85.4	85.6	85.8	86.1	86.3
51.5	105.3	105.6	105.9	106.2	106.6	106.9	107.2	107.5	107.9	108.2	108.5	108.8	109.1	109.5	109.8	110.1	110.4
	82.9	83.1	83.3	83.5	83.6	83.8	84.0	84.2	84.4	84.6	84.8	85.0	85.2	85.4	85.6	85.7	85.9
52.0	105.4	105.7	106.0	106.3	106.6	106.9	107.2	107.5	107.9	108.2	108.6	108.9	109.2	109.6	109.9	110.2	110.5
	82.7	82.9	83.1	83.2	83.4	83.6	83.8	84.0	84.2	84.3	84.5	84.7	84.9	85.1	85.3	85.4	85.6
52.5	105.4	105.8	106.1	106.4	106.7	107.0	107.3	107.6	107.9	108.2	108.6	108.9	109.2	109.7	110.2	110.5	110.8
	82.5	82.7	82.9	83.1	83.2	83.4	83.6	83.8	84.0	84.2	84.3	84.5	84.7	84.9	85.0	85.2	85.4
53.0	105.5	105.8	106.2	106.5	106.8	107.1	107.4	107.7	108.1	108.4	108.7	109.0	109.3	109.6	109.9	110.2	110.5
	82.3	82.5	82.7	82.9	83.0	83.2	83.4	83.6	83.7	83.9	84.1	84.3	84.5	84.7	84.9	85.0	85.2
53.5	105.6	105.9	106.2	106.6	106.9	107.2	107.5	107.8	108.1	108.4	108.7	109.1	109.4	109.7	110.0	110.3	110.6
	82.2	82.3	82.5	82.7	82.9	83.0	83.2	83.4	83.6	83.8	83.9	84.1	84.2	84.4	84.6	84.8	84.9
54.0	105.7	106.0	106.3	106.6	106.9	107.3	107.6	107.9	108.2	108.5	108.8	109.1	109.4	109.7	110.1	110.4	110.7
	82.0	82.2	82.3	82.5	82.7	82.8	83.0	83.2	83.3	83.5	83.7	83.8	84.0	84.2	84.4	84.5	84.7
54.5	105.8	106.1	106.4	106.7	107.0	107.3	107.6	107.9	108.2	108.5	108.8	109.2	109.5	109.8	110.1	110.4	110.7
	81.8	82.0	82.1	82.3	82.5	82.6	82.8	83.0	83.1	83.3	83.5	83.6	83.8	84.0	84.1	84.3	84.5
55.0	105.9	106.2	106.5	106.8	107.1	107.4	107.7	108.0	108.3	108.6	108.9	109.2	109.5	109.8	110.1	110.4	110.8
	81.6	81.8	82.0	82.1	82.3	82.4	82.6	82.8	82.9	83.1	83.3	83.4	83.6	83.7	83.9	84.1	84.2
55.5	106.0	106.3	106.6	106.9	107.2	107.5	107.8	108.1	108.4	108.7	109.0						

## SCAN NADIR ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) FOR BETA=70.00DEG

	180	170	160	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10	0
60.0	10.0	13.5	20.7	28.9	37.4	46.0	54.7	63.3	71.8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	135.6	114.3	103.3	96.0	90.5	85.7	81.3	76.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
60.5	9.5	13.1	20.5	28.8	37.4	46.0	54.7	63.4	71.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	134.1	113.1	102.4	95.4	90.0	85.3	81.0	76.8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
61.0	9.0	12.8	20.3	28.6	37.3	46.0	54.8	63.5	72.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	132.5	111.9	101.5	94.7	89.5	85.0	80.8	76.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
61.5	8.5	12.5	20.1	28.6	37.3	46.1	54.8	63.5	72.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	130.8	110.6	100.6	94.1	89.0	84.6	80.5	76.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
62.0	8.0	12.1	19.9	28.5	37.2	46.1	54.9	63.6	72.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	129.1	109.3	99.7	93.4	88.5	84.3	80.3	76.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
62.5	7.5	11.8	19.7	28.4	37.2	46.1	54.9	63.7	72.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	127.2	108.0	98.8	92.7	88.1	83.9	80.0	76.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
63.0	7.0	11.5	19.6	28.3	37.2	46.1	55.0	63.8	72.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	125.3	106.7	97.8	92.1	87.6	83.6	79.8	76.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
63.5	6.5	11.2	19.5	28.2	37.2	46.1	55.0	63.9	72.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	123.2	105.3	96.9	91.4	87.1	83.2	79.6	75.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
64.0	6.0	11.0	19.3	28.2	37.2	46.1	55.1	64.0	72.7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	121.1	103.9	96.0	90.8	86.6	82.9	79.3	75.7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
64.5	5.5	10.7	19.2	28.1	37.2	46.2	55.2	64.1	72.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	118.8	102.5	95.1	90.1	86.1	82.5	79.1	75.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
65.0	5.0	10.5	19.1	28.1	37.2	46.2	55.2	64.2	73.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	116.4	101.1	94.1	89.5	85.7	82.2	78.8	75.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
65.5	4.5	10.3	19.0	28.1	37.2	46.3	55.3	64.3	73.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	114.0	99.7	93.2	88.8	85.2	81.9	78.6	75.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
66.0	4.0	10.1	19.0	28.0	37.2	46.3	55.4	64.4	73.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	111.4	98.3	92.3	88.1	84.7	81.5	78.4	75.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
66.5	3.5	9.9	18.9	28.0	37.2	46.3	55.4	64.5	73.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	108.7	96.8	91.3	87.5	83.2	81.2	78.1	75.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
67.0	3.0	9.8	18.8	28.0	37.2	46.4	55.5	64.6	73.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	106.0	95.4	90.4	86.8	83.8	80.8	77.9	74.8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
67.5	2.5	9.6	18.8	28.0	37.3	46.5	55.6	64.7	73.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	103.2	93.9	89.4	86.2	83.3	80.5	77.7	74.7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
68.0	2.0	9.5	18.6	28.0	37.3	46.5	55.7	64.8	73.8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	100.3	92.4	88.5	85.5	82.8	80.2	77.4	74.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
68.5	1.5	9.5	18.7	28.1	37.3	46.6	55.8	64.9	73.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	97.3	91.0	87.6	84.9	82.3	79.8	77.2	74.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
69.0	1.0	9.4	18.7	28.1	37.4	46.6	55.9	65.0	74.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	94.3	89.5	86.6	84.2	81.9	79.5	77.0	74.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
69.5	0.5	9.4	18.8	28.1	37.4	46.7	56.0	65.1	74.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	91.3	88.0	85.7	83.6	81.4	79.2	76.8	74.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
70.0	0.	9.4	18.8	28.2	37.5	46.8	56.0	65.2	74.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	88.3	86.5	84.8	82.9	80.9	78.0	76.5	74.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
70.5	0.5	9.4	18.8	28.2	37.6	46.9	56.1	65.3	74.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	85.3	85.1	83.8	82.3	80.5	78.5	76.3	73.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
71.0	1.0	9.5	18.9	28.3	37.6	47.0	56.2	65.5	74.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	82.3	83.6	82.9	81.6	80.0	78.2	76.1	73.7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
71.5	1.5	9.6	18.9	28.3	37.7	47.1	56.4	65.6	74.7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	79.3	82.2	82.0	81.0	79.6	77.8	75.9	73.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
72.0	2.0	9.7	19.0	28.4	37.8	47.1	56.5	65.7	74.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	76.5	80.7	81.1	80.3	79.1	77.5	75.6	73.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
72.5	2.5	9.8	19.1	28.5	37.9	47.2	56.6	65.8	75.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	73.6	79.3	80.2	79.7	78.6	77.2	75.4	73.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
73.0	3.0	9.9	19.2	28.6	38.0	47.3	56.7	66.0	75.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	70.9	77.9	79.3	79.1	78.2	76.9	75.2	73.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
73.5	3.5	10.1	19.3	28.7	38.1	47.4	56.8	66.1	75.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	68.2	76.5	78.4	78.4	77.7	76.6	75.0	73.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
74.0	4.0	10.3	19.4	28.8	38.2	47.6	56.9	66.2	75.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	65.7	75.1	77.5	77.8	77.3	76.2	74.8	73.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
74.5	4.5	10.5	19.6	28.9	38.3	47.7	57.0	66.4	75.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	63.2	73.8	76.6	77.2	76.9	75.9	74.6	72.8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
75.0	5.0	10.8	19.7	29.0	38.4	47.8	57.2	66.5	75.8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	60.9	72.4	75.7	77.8	77.3	76.2	74.4	72.7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
75.5	5.5	11.0	19.9	29.1	38.5	47.9	57.3	66.6	75.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	58.6	71.1	74.8	76.0	76.0	75.3	74.2	72.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
76.0	6.0	11.3	20.0	29.3	38.6	48.0	57.4	66.8	76.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	56.5	69.0	74.0	75.4	75.5	75.0	73.9	72.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
76.5	6.5	11.6	20.2	29.4	38.8	48.2	57.5	66.9	76.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	54.5	68.5	73.1	74.8	75.1	74.7	73.7	72.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
77.0	7.0	11.9	20.4	29.6	38.9	48.3	57.7	67.0	76.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	52.5	67.3	72.3	74.2	74.7	74.4	73.5	72.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
77.5	7.5	12.2	20.6	29.7	39.0	48.4	57.8	67.2	76.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	50.7	66.0	71.4	73.6	74.2	74.1	73.3	72.1	0.	0.	0.	0.	0.					

## SPIN ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) AT THE HORIZON FOR BETA=70.0DEG

24.00	24.25	24.50	24.75	25.00	25.25	25.50	25.75	26.00	26.25	26.50	26.75	27.00	27.25	27.50	27.75	28.00	
60.0	106.8	107.1	107.4	107.7	108.0	108.3	108.6	108.9	109.2	109.5	109.8	110.1	110.3	110.6	110.9	111.2	111.5
	79.9	80.0	80.2	80.3	80.4	80.5	0.7	80.8	80.9	81.0	81.2	81.3	81.4	81.6	81.7	81.8	81.9
60.5	106.9	107.2	107.5	107.8	108.1	108.4	108.7	109.0	109.3	109.6	109.9	110.1	110.4	110.7	111.0	111.3	111.6
	79.7	79.7	80.0	80.1	80.2	80.3	80.5	80.6	80.7	80.8	81.0	81.1	81.2	81.3	81.5	81.6	81.7
61.0	107.0	107.3	107.6	107.9	108.2	108.5	108.8	109.1	109.4	109.7	109.9	110.2	110.5	110.8	111.1	111.4	111.7
	79.6	79.7	79.8	79.9	80.0	80.2	80.3	80.4	80.5	80.6	80.8	80.9	81.0	81.2	81.4	81.5	81.6
61.5	107.2	107.4	107.7	108.0	108.3	108.6	108.9	109.2	109.5	109.8	110.0	110.3	110.6	110.9	111.2	111.5	111.8
	79.4	79.5	79.6	79.7	79.8	80.0	80.1	80.2	80.3	80.4	80.6	80.7	80.8	80.9	81.0	81.1	81.3
62.0	107.3	107.5	107.8	108.1	108.4	108.7	109.0	109.3	109.6	109.8	110.1	110.4	110.7	111.0	111.3	111.6	111.9
	79.2	79.3	79.4	79.5	79.7	79.8	79.9	80.0	80.1	80.2	80.3	80.5	80.6	80.7	80.8	80.9	81.0
62.5	107.4	107.7	107.9	108.2	108.5	108.8	109.1	109.4	109.7	109.9	110.2	110.5	110.8	111.1	111.4	111.7	111.9
	79.0	79.1	79.3	79.4	79.5	79.6	79.7	79.8	79.9	80.0	80.1	80.2	80.4	80.5	80.6	80.7	80.8
63.0	107.5	107.8	108.0	108.3	108.6	108.9	109.2	109.5	109.8	110.0	110.3	110.6	110.9	111.2	111.5	111.8	112.0
	78.9	79.0	79.1	79.2	79.3	79.4	79.5	79.6	79.7	79.8	79.9	80.0	80.1	80.2	80.4	80.5	80.6
63.5	107.6	107.9	108.2	108.4	108.7	109.0	109.3	109.6	109.9	110.1	110.4	110.7	111.0	111.3	111.6	111.9	112.1
	78.7	78.8	78.9	79.0	79.1	79.2	79.3	79.4	79.5	79.6	79.7	79.8	79.9	80.0	80.1	80.2	80.3
64.0	107.7	108.0	108.3	108.6	108.8	109.1	109.4	109.7	110.0	110.3	110.5	110.8	111.1	111.4	111.7	111.9	112.2
	78.5	78.6	78.7	78.8	78.9	79.0	79.1	79.2	79.3	79.4	79.5	79.6	79.7	79.8	79.9	80.0	80.1
64.5	107.8	108.1	108.4	108.7	109.0	109.3	109.5	109.8	110.1	110.4	110.6	110.9	111.2	111.5	111.8	112.0	112.3
	78.3	78.4	78.5	78.6	78.7	78.8	78.9	79.0	79.1	79.2	79.3	79.4	79.5	79.6	79.7	79.8	79.9
65.0	107.9	108.2	108.5	108.8	109.1	109.3	109.6	109.9	110.2	110.5	110.7	111.0	111.3	111.6	111.9	112.1	112.4
	78.1	78.2	78.3	78.4	78.5	78.6	78.7	78.8	78.9	79.0	79.1	79.2	79.3	79.4	79.5	79.6	79.7
65.5	108.0	108.3	108.6	108.9	109.2	109.5	109.7	110.0	110.3	110.6	110.9	111.1	111.4	111.7	112.0	112.3	112.5
	78.0	78.1	78.2	78.3	78.4	78.5	78.6	78.7	78.8	78.9	79.0	79.1	79.2	79.3	79.4	79.5	79.6
66.0	108.2	108.4	108.7	109.0	109.3	109.6	109.8	110.1	110.4	110.7	111.0	111.2	111.5	111.8	112.1	112.4	112.6
	77.8	77.9	78.0	78.1	78.2	78.3	78.4	78.5	78.6	78.7	78.8	78.9	79.0	79.1	79.2	79.3	79.4
66.5	108.3	108.6	108.8	109.1	109.4	109.7	110.0	110.2	110.5	110.8	111.1	111.3	111.6	111.9	112.2	112.5	112.7
	77.6	77.7	77.8	77.9	78.0	78.1	78.2	78.3	78.4	78.5	78.6	78.7	78.8	78.9	79.0	79.1	79.2
67.0	108.4	108.7	109.0	109.2	109.5	109.8	110.1	110.4	110.6	110.9	111.2	111.5	111.7	112.0	112.3	112.6	112.8
	77.4	77.5	77.6	77.7	77.8	77.9	78.0	78.1	78.2	78.3	78.4	78.5	78.6	78.7	78.8	78.9	79.0
67.5	108.5	108.8	109.1	109.4	109.6	109.9	110.2	110.5	110.7	111.0	111.3	111.6	111.8	112.1	112.4	112.7	113.0
	77.2	77.3	77.4	77.5	77.6	77.7	77.8	77.9	78.0	78.1	78.2	78.3	78.4	78.5	78.6	78.7	78.8
68.0	108.6	108.9	109.2	109.5	109.8	110.0	110.3	110.6	110.9	111.1	111.4	111.7	112.0	112.3	112.5	112.8	113.1
	77.1	77.1	77.2	77.3	77.4	77.5	77.6	77.7	77.8	77.9	78.0	78.1	78.2	78.3	78.4	78.5	78.6
68.5	108.8	109.1	109.3	109.6	109.9	110.2	110.4	110.7	111.0	111.3	111.5	111.8	112.1	112.4	112.6	112.9	113.2
	76.9	77.0	77.1	77.2	77.3	77.4	77.5	77.6	77.7	77.8	77.9	77.10	77.11	77.12	77.13	77.14	77.15
69.0	108.9	109.2	109.5	109.7	110.0	110.3	110.5	110.8	111.1	111.4	111.6	111.9	112.2	112.5	112.7	113.0	113.3
	76.7	76.8	76.9	77.0	77.1	77.2	77.3	77.4	77.5	77.6	77.7	77.8	77.9	77.10	77.11	77.12	77.13
69.5	109.0	109.3	109.6	109.9	110.1	110.4	110.7	110.9	111.2	111.5	111.8	112.0	112.3	112.6	112.9	113.1	113.4
	76.5	76.6	76.7	76.8	76.9	77.0	77.1	77.2	77.3	77.4	77.5	77.6	77.7	77.8	77.9	77.10	77.11
70.0	109.2	109.4	109.7	110.0	110.3	110.5	110.8	111.0	111.3	111.6	111.9	112.1	112.4	112.7	113.0	113.3	113.5
	76.3	76.4	76.5	76.6	76.7	76.8	76.9	77.0	77.1	77.2	77.3	77.4	77.5	77.6	77.7	77.8	77.9
70.5	109.3	109.6	109.8	110.1	110.4	110.7	110.9	111.2	111.5	111.7	112.0	112.3	112.6	112.8	113.1	113.4	113.6
	76.1	76.2	76.3	76.4	76.5	76.6	76.7	76.8	76.9	77.0	77.1	77.2	77.3	77.4	77.5	77.6	77.7
71.0	109.4	109.7	110.0	110.2	110.5	110.8	111.1	111.4	111.6	111.9	112.1	112.4	112.7	113.0	113.2	113.5	113.8
	76.0	76.0	76.1	76.1	76.2	76.3	76.4	76.5	76.6	76.7	76.8	76.9	77.0	77.1	77.2	77.3	77.4
71.5	109.6	109.8	110.1	110.4	110.6	110.9	111.2	111.5	111.7	112.0	112.3	112.5	112.8	113.1	113.4	113.6	113.9
	75.8	75.8	75.9	75.9	76.0	76.1	76.2	76.3	76.4	76.5	76.6	76.7	76.8	76.9	77.0	77.1	77.2
72.0	109.7	110.0	110.2	110.5	110.8	111.0	111.3	111.6	111.9	112.1	112.4	112.7	112.9	113.2	113.5	113.7	114.0
	75.6	75.6	75.7	75.7	75.8	75.9	75.9	76.0	76.1	76.2	76.3	76.4	76.5	76.6	76.7	76.8	76.9
72.5	109.8	110.1	110.4	110.6	110.9	111.2	111.4	111.7	112.0	112.3	112.5	112.8	113.1	113.3	113.6	114.1	114.4
	75.4	75.4	75.5	75.5	75.6	75.7	75.7	75.8	75.8	75.9	75.9	76.0	76.0	76.1	76.2	76.2	76.3
73.0	110.0	110.2	110.5	110.8	111.0	111.3	111.6	111.8	112.1	112.4	112.7	112.9	113.2	113.5	113.7	114.0	114.3
	75.2	75.3	75.3	75.4	75.4	75.5	75.5	75.6	75.6	75.7	75.7	75.8	75.8	75.9	75.9	76.0	76.0
73.5	110.1	110.4	110.6	110.9	111.2	111.4	111.7	112.0	112.3	112.5	112.8	113.1	113.3	113.6	113.9	114.1	114.4
	75.0	75.1	75.1	75.2	75.2	75.3	75.3	75.4	75.4	75.5	75.5	75.6	75.6	75.6	75.7	75.7	75.8
74.0	110.2	110.5	110.8	111.0	111.3	111.6	111.9	112.1	112.4	112.7	112.9	113.2	113.5	113.7	114.0	114.3	114.5
	74.8	74.9	74.9	75.0	75.0	75.1	75.1	75.2	75.2	75.3	75.3	75.4	75.4	75.5	75.5	75.5	75.6
74.5	110.4	110.6	110.9	111.2	111.5	111.7	112.0	112.3	112.5	112.8	113.1	113.3	113.6	113.9	114.1	114.4	114.7
	74.6	74.7	74.7	74.8	74.8	74.9	74.9	75.0	75.0	75.0	75.1	75.1	75.2	75.2	75.3	75.3	75.4
75.0	110.5	110.8	111.1	111.3	111.6	111.9	112.1	112.4	112.7	112.9	113.2	113.5	113.7	114.0	114.3	114.5	114.8
	74.4	74.4	74.5	74.6	74.6	74.7	74.7	74.8	74.8	74.9	74.9	75.0	75.0	75.1	75.1	75.2	75.2
75.5	110.7	110.9	111.2	111.5	111.7	112.0	112.3	112.5	112.8	113.1</td							

SCAN NADIR ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) FOR BETA=70.0DEG

SPIN ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) AT THE HORIZON FOR BETA=70.0DEG

	24.00	24.25	24.50	24.75	25.00	25.25	25.50	25.75	26.00	26.25	26.50	26.75	27.00	27.25	27.50	27.75	28.00
80.0	112.0	112.3	112.6	112.8	113.1	113.4	113.6	113.9	114.2	114.4	114.7	115.0	115.2	115.5	115.8	116.0	116.3
	72.4	72.5	72.5	72.5	72.5	72.5	72.5	72.5	72.5	72.5	72.5	72.5	72.5	72.5	72.5	72.5	72.6
80.5	112.2	112.5	112.7	113.0	113.3	113.5	113.8	114.1	114.3	114.6	114.9	115.1	115.4	115.7	115.9	116.2	116.5
	72.2	72.2	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3
81.0	112.4	112.6	112.9	113.2	113.4	113.7	114.0	114.2	114.5	114.8	115.0	115.3	115.6	115.8	116.1	116.4	116.6
	72.0	72.0	72.0	72.0	72.0	72.1	72.1	72.1	72.1	72.1	72.1	72.1	72.1	72.1	72.1	72.1	72.1
81.5	112.5	112.8	113.1	113.3	113.6	113.9	114.1	114.4	114.7	114.9	115.2	115.5	115.7	116.0	116.3	116.5	116.8
	71.8	71.8	71.8	71.8	71.8	71.8	71.8	71.8	71.8	71.8	71.8	71.8	71.8	71.8	71.8	71.8	71.8
82.0	112.7	113.0	113.2	113.5	113.8	114.0	114.3	114.6	114.8	115.1	115.4	115.6	115.9	116.2	116.4	116.7	117.0
	71.6	71.6	71.6	71.6	71.6	71.6	71.6	71.6	71.6	71.6	71.6	71.6	71.6	71.6	71.6	71.6	71.6
82.5	112.9	113.1	113.4	113.7	113.9	114.2	114.5	114.7	115.0	115.3	115.5	115.8	116.1	116.3	116.6	116.9	117.1
	71.4	71.4	71.4	71.4	71.4	71.4	71.4	71.4	71.4	71.4	71.4	71.4	71.4	71.4	71.4	71.4	71.4
83.0	113.0	113.3	113.6	113.8	114.1	114.4	114.6	114.9	115.2	115.4	115.7	116.0	116.2	116.5	116.8	117.0	117.3
	71.2	71.2	71.2	71.2	71.2	71.2	71.2	71.2	71.2	71.2	71.2	71.2	71.2	71.2	71.2	71.2	71.2
83.5	113.2	113.5	113.7	114.0	114.3	114.5	114.8	115.1	115.3	115.6	115.9	116.1	116.4	116.7	116.9	117.2	117.5
	71.0	71.0	71.0	70.9	70.9	70.9	70.9	70.9	70.9	70.9	70.9	70.9	70.9	70.9	70.9	70.9	70.9
84.0	113.4	113.7	113.9	114.2	114.5	114.7	115.0	115.3	115.5	115.8	116.1	116.3	116.6	116.9	117.1	117.4	117.7
	70.8	70.8	70.7	70.7	70.7	70.7	70.7	70.7	70.7	70.6	70.6	70.6	70.6	70.6	70.6	70.5	70.5
84.5	113.6	113.8	114.1	114.4	114.6	114.9	115.2	115.4	115.7	116.0	116.2	116.5	116.8	117.0	117.3	117.6	117.8
	70.5	70.5	70.5	70.5	70.5	70.5	70.4	70.4	70.4	70.4	70.4	70.4	70.3	70.3	70.3	70.3	70.2
85.0	113.7	114.0	114.3	114.5	114.8	115.1	115.3	115.6	115.9	116.1	116.4	116.7	116.9	117.2	117.5	117.7	118.0
	70.3	70.3	70.3	70.3	70.2	70.2	70.2	70.2	70.2	70.2	70.1	70.1	70.1	70.1	70.0	70.0	70.0
85.5	113.9	114.2	114.5	114.7	115.0	115.3	115.5	115.8	116.1	116.3	116.6	116.9	117.1	117.4	117.7	118.2	118.6
	70.1	70.1	70.1	70.0	70.0	70.0	70.0	69.9	69.9	69.9	69.9	69.8	69.8	69.8	69.7	69.7	69.7
86.0	114.1	114.4	114.6	114.9	115.2	115.4	115.7	116.0	116.2	116.5	116.8	117.0	117.3	117.6	117.8	118.1	118.4
	69.9	69.8	69.8	69.8	69.8	69.8	69.8	69.8	69.7	69.7	69.7	69.6	69.6	69.6	69.5	69.5	69.4
86.5	114.3	114.6	114.8	115.1	115.4	115.6	115.9	116.2	116.4	116.7	117.0	117.2	117.5	117.8	118.0	118.3	118.6
	69.6	69.6	69.6	69.6	69.5	69.5	69.5	69.5	69.5	69.4	69.4	69.3	69.3	69.2	69.2	69.2	69.2
87.0	114.5	114.7	115.0	115.3	115.5	115.8	116.1	116.4	116.6	116.9	117.2	117.7	117.9	118.0	118.2	118.5	118.8
	69.4	69.4	69.4	69.3	69.3	69.3	69.2	69.2	69.2	69.2	69.1	69.1	69.0	69.0	68.9	68.9	68.9
87.5	114.7	114.9	115.2	115.5	115.7	116.0	116.3	116.5	116.8	117.1	117.3	117.6	117.9	118.2	118.4	118.7	119.0
	69.2	69.2	69.1	69.1	69.1	69.0	69.0	68.9	68.9	68.9	68.9	68.8	68.8	68.7	68.7	68.7	68.6
88.0	114.9	115.1	115.4	115.7	115.9	116.2	116.5	116.7	117.0	117.3	117.5	117.8	118.1	118.3	118.6	118.9	119.2
	69.0	68.9	68.9	68.9	68.8	68.8	68.8	68.7	68.7	68.7	68.6	68.6	68.5	68.5	68.4	68.4	68.3
88.5	115.1	115.3	115.6	115.9	116.1	116.4	116.7	116.9	117.2	117.5	117.7	118.0	118.3	118.5	118.8	119.1	119.4
	68.7	68.7	68.7	68.6	68.6	68.6	68.5	68.5	68.5	68.4	68.4	68.3	68.3	68.2	68.2	68.1	68.1
89.0	115.2	115.5	115.8	116.1	116.3	116.6	116.9	117.1	117.4	117.7	117.9	118.2	118.5	118.7	119.0	119.3	119.6
	68.5	68.4	68.4	68.4	68.3	68.3	68.2	68.2	68.2	68.1	68.1	68.0	68.0	67.9	67.9	67.8	67.8
89.5	115.4	115.7	116.0	116.3	116.5	116.8	117.1	117.3	117.6	117.9	118.1	118.4	118.7	119.0	119.2	119.8	120.0
	68.3	68.2	68.2	68.1	68.1	68.0	68.0	67.9	67.9	67.8	67.8	67.8	67.7	67.6	67.5	67.5	67.5
90.0	115.6	115.9	116.2	116.5	116.7	117.0	117.3	117.5	117.8	118.1	118.3	118.6	118.9	119.2	119.4	119.7	120.0
	68.0	68.0	67.9	67.9	67.8	67.8	67.7	67.7	67.7	67.6	67.6	67.5	67.5	67.4	67.3	67.3	67.2
90.5	115.9	116.1	116.4	116.7	116.9	117.2	117.5	117.7	118.0	118.3	118.6	118.8	119.1	119.4	119.6	119.9	120.2
	67.8	67.7	67.7	67.6	67.6	67.5	67.5	67.4	67.4	67.3	67.3	67.2	67.2	67.1	67.0	66.9	66.9
91.0	116.1	116.3	116.6	116.9	117.1	117.4	117.7	118.0	118.2	118.5	118.8	119.0	119.3	119.6	119.9	120.4	120.6
	67.5	67.5	67.4	67.4	67.3	67.3	67.2	67.2	67.2	67.1	67.0	67.0	66.9	66.8	66.7	66.6	66.6
91.5	116.3	116.5	116.8	117.1	117.4	117.6	117.9	118.2	118.4	118.7	119.0	119.3	119.5	119.8	120.1	120.3	120.6
	67.3	67.3	67.2	67.1	67.1	67.0	66.9	66.9	66.8	66.8	66.7	66.7	66.6	66.5	66.4	66.3	66.3
92.0	116.5	116.7	117.0	117.3	117.6	117.8	118.1	118.4	118.7	118.9	119.2	119.5	119.7	120.0	120.3	120.6	120.8
	67.0	67.0	66.9	66.9	66.8	66.7	66.7	66.6	66.6	66.5	66.4	66.4	66.3	66.2	66.2	66.1	66.0
92.5	116.7	117.0	117.2	117.5	117.8	118.1	118.3	118.6	118.9	119.1	119.4	119.7	120.0	120.2	120.5	120.8	121.1
	66.8	66.7	66.7	66.6	66.5	66.5	66.4	66.4	66.3	66.3	66.2	66.2	66.1	66.0	65.9	65.9	65.7
93.0	116.9	117.2	117.5	117.7	118.0	118.3	118.5	118.8	119.1	119.4	119.6	119.9	120.2	120.5	120.8	121.1	121.3
	66.5	66.5	66.4	66.4	66.3	66.3	66.2	66.1	66.1	66.0	65.9	65.8	65.7	65.6	65.5	65.4	65.4
93.5	117.1	117.4	117.7	117.9	118.2	118.5	118.8	119.0	119.3	119.6	119.9	120.1	120.4	120.7	121.0	121.2	121.5
	66.3	66.3	66.2	66.1	66.0	65.9	65.9	65.8	65.7	65.7	65.6	65.5	65.4	65.3	65.2	65.2	65.1
94.0	117.3	117.6	117.9	118.2	118.4	118.7	119.0	119.3	119.5	119.8	120.1	120.4	120.7	121.0	121.3	121.6	121.8
	66.0	65.9	65.9	65.8	65.7	65.6	65.6	65.5	65.4	65.4	65.3	65.2	65.2	65.1	65.0	64.9	64.8
94.5	117.6	117.8	118.1	118.4	118.7	119.0	119.2	119.5	119.8	120.1	120.4	120.7	121.0	121.2	121.4	121.7	122.0
	65.8	65.7	65.6	65.5	65.4	65.3	65.2	65.1	65.0	64.9	64.8	64.7	64.6	64.5	64.4	64.3	64.3
95.0	117.8	118.1	118.3	118.6	118.9	119.2	119.5	119.7	120.0	120.3	120.6	120.8	121.1	121.4	121.7	122.0	122.2
	65.5	65.4	65.3	65.2	65.1	65.0	65.0	64.9	64.8	64.7	64.6	64.5	64.4	64.3	64.2	64.2	64.2
95.5	118.0	118.3	118.6	118.9	119.1	119.4	119.7	120.0	120.2	120.5</td							

SCAN NADIR ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) FOR BETA=70.0DEG

## SPIN ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) AT THE HORIZON FOR BETA=70.0DEG

	24.00	24.25	24.50	24.75	25.00	25.25	25.50	25.75	26.00	26.25	26.50	26.75	27.00	27.25	27.50	27.75	28.00
100.0	120.2	120.5	120.8	121.1	121.4	121.7	122.0	122.3	122.5	122.8	123.1	123.4	123.7	124.0	124.3	124.6	124.9
	62.7	62.6	62.5	62.4	62.3	62.2	62.0	61.9	61.8	61.7	61.6	61.5	61.3	61.2	61.1	61.0	60.9
100.5	120.5	120.8	121.1	121.4	121.7	121.9	122.2	122.5	122.8	123.1	123.4	123.7	124.0	124.3	124.6	124.8	125.1
	62.4	62.3	62.2	62.1	62.0	61.8	61.7	61.6	61.5	61.4	61.2	61.1	61.0	60.9	60.7	60.6	60.5
101.0	120.8	121.1	121.4	121.6	121.9	122.1	122.5	122.8	123.1	123.4	123.7	124.0	124.3	124.6	124.8	125.1	125.4
	62.1	62.0	61.9	61.8	61.6	61.5	61.4	61.3	61.2	61.0	60.9	60.8	60.7	60.5	60.4	60.3	60.1
101.5	121.0	121.3	121.6	121.9	122.2	122.5	122.8	123.1	123.4	123.7	124.0	124.3	124.5	124.8	125.1	125.4	125.7
	61.8	61.7	61.6	61.4	61.3	61.2	61.1	60.9	60.8	60.7	60.6	60.4	60.3	60.2	60.0	59.9	59.8
102.0	121.3	121.6	121.9	122.2	122.5	122.8	123.1	123.4	123.7	124.0	124.3	124.5	124.8	125.1	125.4	125.7	126.0
	61.5	61.4	61.2	61.1	61.0	60.9	60.7	60.6	60.5	60.4	60.2	60.1	60.0	59.8	59.7	59.5	59.4
102.5	121.6	121.9	122.2	122.5	122.8	123.1	123.4	123.7	124.0	124.2	124.5	124.8	125.1	125.4	125.7	126.0	126.3
	61.2	61.0	60.9	60.8	60.7	60.5	60.4	60.3	60.1	60.0	59.9	59.7	59.6	59.5	59.3	59.2	59.0
103.0	121.9	122.2	122.5	122.8	123.1	123.4	123.7	124.0	124.2	124.5	124.8	125.1	125.4	125.7	126.0	126.3	126.6
	60.9	60.7	60.6	60.5	60.3	60.2	60.1	59.9	59.8	59.7	59.5	59.4	59.2	59.1	58.9	58.8	58.6
103.5	122.2	122.5	122.8	123.1	123.4	123.7	124.0	124.3	124.6	124.8	125.1	125.4	125.7	126.0	126.4	126.7	127.0
	60.5	60.4	60.3	60.1	59.9	59.7	59.6	59.4	59.3	59.2	59.0	58.9	58.7	58.6	58.4	58.3	57.9
104.0	122.5	122.8	123.1	123.4	123.7	124.0	124.3	124.6	124.9	125.2	125.5	125.8	126.1	126.4	126.7	127.0	127.3
	60.2	60.1	59.9	59.8	59.7	59.5	59.4	59.2	59.1	58.9	58.8	58.6	58.5	58.3	58.2	58.0	57.9
104.5	122.8	123.1	123.4	123.7	124.0	124.3	124.6	124.9	125.2	125.5	125.8	126.1	126.4	126.7	127.0	127.3	127.6
	59.9	59.7	59.6	59.5	59.3	59.2	59.0	58.9	58.7	58.6	58.4	58.3	58.1	58.0	57.8	57.6	57.5
105.0	123.1	123.4	123.7	124.0	124.3	124.6	124.9	125.2	125.5	125.8	126.1	126.4	126.7	127.0	127.3	127.6	127.9
	59.5	59.4	59.3	59.1	59.0	58.8	58.7	58.5	58.4	58.2	58.0	57.9	57.7	57.6	57.4	57.2	57.1
105.5	123.4	123.7	124.0	124.3	124.6	124.9	125.2	125.5	125.8	126.1	126.4	126.7	127.0	127.3	127.6	127.9	128.3
	59.2	59.1	58.9	58.8	58.6	58.5	58.3	58.1	58.0	57.8	57.7	57.5	57.3	57.2	57.0	56.8	56.7
106.0	123.7	124.0	124.3	124.6	124.9	125.2	125.5	125.8	126.1	126.4	126.8	127.1	127.4	127.7	128.0	128.3	128.6
	58.9	58.7	58.6	58.4	58.2	58.1	57.9	57.8	57.6	57.4	57.3	57.1	56.9	56.8	56.6	56.4	56.3
106.5	124.0	124.3	124.6	124.9	125.2	125.5	125.8	126.2	126.5	126.8	127.1	127.4	127.7	128.0	128.3	128.7	129.0
	58.5	58.4	58.2	58.0	57.9	57.7	57.6	57.4	57.2	57.1	56.9	56.7	56.5	56.4	56.2	56.0	55.8
107.0	124.3	124.6	124.9	125.3	125.6	125.9	126.2	126.5	126.8	127.1	127.4	127.7	128.1	128.4	128.7	129.0	129.3
	58.2	58.0	57.8	57.7	57.5	57.3	57.2	57.0	56.8	56.7	56.5	56.3	56.1	56.0	55.8	55.6	55.4
107.5	124.7	125.0	125.3	125.6	125.9	126.2	126.5	126.8	127.1	127.5	127.8	128.1	128.4	128.7	129.0	129.3	129.7
	57.8	57.6	57.5	57.3	57.1	57.0	56.8	56.6	56.4	56.3	56.1	55.9	55.7	55.5	55.4	55.2	55.0
108.0	125.0	125.3	125.6	125.9	126.2	126.6	126.9	127.2	127.5	127.8	128.1	128.5	128.8	129.1	129.4	129.7	130.1
	57.4	57.3	57.1	56.9	56.7	56.6	56.4	56.2	56.0	55.9	55.7	55.5	55.3	55.1	54.9	54.7	54.5
108.5	125.3	125.6	126.0	126.3	126.6	126.9	127.2	127.5	127.8	128.2	128.5	128.8	129.1	129.5	129.8	130.1	130.4
	57.1	56.9	56.7	56.5	56.4	56.2	56.0	55.8	55.6	55.4	55.3	55.1	54.9	54.7	54.5	54.3	54.1
109.0	125.7	126.0	126.3	126.6	126.9	127.3	127.6	127.9	128.2	128.5	128.8	129.2	129.5	129.8	130.2	130.5	130.8
	56.7	56.5	56.3	56.1	56.0	55.8	55.6	55.4	55.2	55.0	54.8	54.6	54.4	54.2	54.0	53.8	53.6
109.5	126.0	126.3	126.7	127.0	127.3	127.6	127.9	128.3	128.6	128.9	129.2	129.6	129.9	130.2	130.6	131.0	131.2
	56.3	56.1	55.9	55.8	55.6	55.4	55.2	55.0	54.8	54.6	54.4	54.2	54.0	53.8	53.6	53.4	53.2
110.0	126.4	126.7	127.0	127.3	127.7	128.0	128.3	128.6	129.0	129.3	129.6	129.9	130.3	130.6	131.0	131.3	131.6
	55.9	55.7	55.5	55.3	55.2	55.0	54.8	54.6	54.4	54.2	54.0	53.8	53.6	53.4	53.2	53.0	52.7
110.5	126.7	127.1	127.4	127.7	128.0	128.4	128.7	129.0	129.4	129.7	130.0	130.3	130.7	131.0	131.4	131.7	132.0
	55.5	55.3	55.1	54.9	54.7	54.5	54.3	54.1	53.9	53.7	53.5	53.3	53.1	52.9	52.7	52.5	52.2
111.0	127.1	127.4	127.8	128.1	128.4	128.8	129.1	129.4	129.7	130.1	130.4	130.8	131.1	131.4	131.7	132.1	132.4
	55.1	54.9	54.7	54.5	54.3	54.1	53.9	53.7	53.5	53.3	53.1	52.9	52.6	52.4	52.2	52.0	51.8
111.5	127.5	127.8	128.1	128.4	128.7	129.0	129.3	129.6	129.9	130.2	130.5	130.8	131.1	131.4	131.7	132.2	132.5
	54.7	54.5	54.3	54.1	53.9	53.7	53.5	53.3	53.1	52.8	52.6	52.4	52.2	51.9	51.7	51.5	51.3
112.0	127.9	128.2	128.5	128.9	129.2	129.5	129.9	130.2	130.6	130.9	131.2	131.6	131.9	132.3	132.6	133.0	133.3
	54.3	54.1	53.9	53.7	53.5	53.3	53.0	52.8	52.6	52.4	52.1	51.9	51.7	51.5	51.2	50.8	50.6
112.5	128.3	128.6	128.9	129.3	129.6	129.9	130.3	130.6	131.0	131.3	131.7	132.0	132.4	132.7	133.0	133.4	133.8
	53.9	53.7	53.5	53.4	53.2	53.0	52.8	52.6	52.4	52.1	51.9	51.7	51.4	51.2	50.9	50.7	50.5
113.0	128.7	129.3	129.7	130.0	130.4	130.7	131.1	131.4	131.7	132.1	132.4	132.8	133.2	133.5	133.9	134.2	134.6
	53.4	53.2	53.0	52.8	52.6	52.3	52.1	51.9	51.7	51.4	51.2	50.9	50.7	50.5	50.2	50.0	49.7
113.5	129.1	129.4	129.8	130.1	130.4	130.8	131.1	131.5	131.8	132.2	132.5	132.9	133.2	133.6	134.0	134.3	134.7
	53.0	52.8	52.6	52.3	52.1	51.9	51.6	51.4	51.2	50.9	50.7	50.4	50.2	50.0	49.7	49.4	49.2
114.0	129.5	129.8	130.2	130.5	130.9	131.2	131.6	131.9	132.3	132.6	133.0	133.3	133.7	134.1	134.4	134.8	135.1
	52.6	52.3	52.1	51.9	51.6	51.4	51.2	50.9	50.7	50.4	50.2	49.9	49.7	49.4	49.1	48.8	48.6
114.5	129.9	130.3	130.6	131.0	131.3	131.7	132.0	132.4	132.7	133.1	133.4	133.8	134.2	134.5	134.9	135.3	135.6
	52.1	51.9	51.6	51.4	51.2	50.9	50.7	50.4	50.2	49.9	49.7	49.4	49.1	48.9	48.6	48.4	48.1
115.0	130.3	130.7	131.0	131.4	131.8	132.1	132.5	132.8	133.2	133.6	133.9	134.3	134.7	135.0	135.4	135.8	136.1
	51.6	51.4	51.2	50.9	50.7	50.4	50.2	49.9	49.7	49.4	49.1	48.9	48.6	48.3	48.1	47.8	47.5
115.5	130.8	131.1	131.5	131.9	132.2	132.6	132										

## SCAN NADIR ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) FOR BETA=70.0DEG

	180	170	160	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10	0
120.0	50.0	50.9	53.6	57.7	63.1	69.4	76.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	12.1	23.5	33.8	42.6	50.3	56.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
120.5	50.5	51.4	54.0	58.2	63.5	69.7	76.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	12.1	23.4	33.6	42.5	50.1	56.8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
121.0	51.0	51.9	54.5	58.6	63.8	70.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	12.0	23.3	33.4	42.3	50.0	56.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
121.5	51.5	52.4	55.0	59.0	64.2	70.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	11.9	23.1	33.2	42.1	49.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
122.0	52.0	52.9	55.4	59.4	64.6	70.7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	11.8	23.0	33.1	42.0	49.7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
122.5	52.5	53.4	55.9	59.8	65.0	71.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	11.7	22.8	32.9	41.8	49.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
123.0	53.0	53.9	56.3	60.2	65.3	71.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	11.7	22.7	32.8	41.7	49.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
123.5	53.5	54.3	56.8	60.7	65.7	71.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	11.6	22.6	32.6	41.5	49.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
124.0	54.0	54.8	57.3	61.1	66.1	72.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	11.5	22.5	32.5	41.4	49.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
124.5	54.5	55.3	57.7	61.5	66.5	72.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	11.4	22.3	32.3	41.2	49.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
125.0	55.0	55.8	58.2	61.9	66.8	72.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	11.4	22.2	32.2	41.1	49.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
125.5	55.5	56.3	58.6	62.4	67.2	73.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	11.3	22.1	32.0	40.9	48.8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
126.0	56.0	56.8	59.1	62.8	67.6	73.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	11.2	22.0	31.9	40.8	48.7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
126.5	56.5	57.3	59.6	63.2	68.0	73.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	11.2	21.9	31.8	40.7	48.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
127.0	57.0	57.8	60.0	63.6	68.3	73.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	11.1	21.8	31.6	40.5	48.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
127.5	57.5	58.3	60.5	64.1	68.7	74.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	11.1	21.7	31.5	40.4	48.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
128.0	58.0	58.8	61.0	64.5	69.1	74.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	11.0	21.6	31.4	40.3	48.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
128.5	58.5	59.2	61.4	64.9	69.5	74.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	10.9	21.5	31.3	40.2	48.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
129.0	59.0	59.7	61.9	65.3	69.9	75.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	10.9	21.4	31.1	40.0	48.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
129.5	59.5	60.2	62.4	65.8	70.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	10.8	21.3	31.0	39.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
130.0	60.0	60.7	62.8	66.2	70.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	10.8	21.2	30.9	39.8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
130.5	60.5	61.2	63.3	66.6	71.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	10.7	21.1	30.8	39.7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
131.0	61.0	61.7	63.8	67.1	71.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	10.7	21.0	30.7	39.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
131.5	61.5	62.2	64.2	67.5	71.8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	10.6	20.9	30.6	39.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
132.0	62.0	62.7	64.7	67.9	72.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	10.6	20.8	30.5	39.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
132.5	62.5	63.2	65.2	68.4	72.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	10.5	20.7	30.4	39.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
133.0	63.0	63.7	65.6	68.8	73.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	10.5	20.7	30.3	39.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
133.5	63.5	64.2	66.1	69.2	73.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	10.4	20.6	30.2	39.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
134.0	64.0	64.7	66.6	69.6	73.7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	10.4	20.5	30.1	39.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
134.5	64.5	65.1	67.0	70.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	10.4	20.4	30.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
135.0	65.0	65.6	67.5	70.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	10.3	20.4	29.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
135.5	65.5	66.1	68.0	70.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	10.3	20.3	29.8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
136.0	66.0	66.6	68.4	71.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	10.2	20.2	29.7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
136.5	66.5	67.1	68.9	71.8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	10.2	20.1	29.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
137.0	67.0	67.6	69.4	72.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	10.2	20.1	29.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
137.5	67.5	68.1	69.9	72.7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	10.1	20.0	29.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
138.0	68.0	68.6	70.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	10.1	20.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
138.5	68.5	69.1	70.8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	10.1	19.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
139.0	69.0	69.6	71.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	10.0	19.8	0.</																

SPIN ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) AT THE HORIZON FOR BETA=70.0DEG

Table III

 $\beta = 90 \text{ deg}$ 

®

SCAN NADIR ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) FOR BETA=90.0DEG

## SPIN ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) AT THE HORIZON FOR BETA=90.0DEG

	28.00	28.25	28.50	28.75	29.00	29.25	29.50	29.75	30.00	30.25	30.50	30.75	31.00	31.25	31.50	31.75	32.00
20.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
24.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
24.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
25.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
25.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
26.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
26.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
27.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
27.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
28.0	180.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
28.5	169.7	172.7	180.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
168.3	171.7	180.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
29.0	165.5	167.5	169.8	172.8	180.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
163.6	165.8	168.4	171.8	180.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
29.5	162.4	164.0	165.7	167.6	169.9	172.9	180.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
160.0	161.8	163.7	165.9	168.4	171.8	180.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
30.0	159.9	161.2	162.6	164.1	165.8	167.8	170.0	172.9	180.0	0.	0.	0.	0.	0.	0.	0.	0.
157.1	158.5	160.1	161.1	163.8	165.9	168.5	171.9	180.0	0.	0.	0.	0.	0.	0.	0.	0.	0.
30.5	157.7	158.8	160.1	161.1	162.8	164.3	166.0	167.9	170.1	173.0	180.0	0.	0.	0.	0.	0.	0.
154.5	155.8	157.2	158.6	160.2	161.9	163.8	166.0	168.6	171.5	180.0	0.	0.	0.	0.	0.	0.	0.
31.0	155.7	156.8	157.9	159.0	160.3	161.6	163.0	164.5	166.1	168.0	170.2	173.1	180.0	0.	0.	0.	0.
152.2	153.4	154.6	155.9	157.3	159.8	160.3	162.0	163.9	166.1	168.6	171.9	180.0	0.	0.	0.	0.	0.
31.5	154.0	154.9	156.0	157.0	158.1	159.3	160.5	161.8	163.1	164.6	166.3	168.1	170.3	173.2	180.0	0.	0.
150.2	151.5	152.4	153.5	154.8	156.0	157.4	158.9	160.4	162.1	164.0	166.0	168.7	172.0	180.0	0.	0.	0.
32.0	152.4	153.3	154.2	155.2	156.2	157.2	158.3	159.5	160.7	161.9	163.3	164.8	166.4	168.2	170.4	173.2	180.0
148.3	149.3	150.3	151.1	152.5	153.7	154.9	156.2	157.5	159.0	159.6	162.3	164.1	166.2	168.7	172.0	180.0	0.
32.5	150.9	151.8	152.6	153.5	154.5	155.4	156.4	157.4	158.5	159.7	160.8	162.1	163.4	164.9	166.5	168.3	170.5
146.6	147.5	148.5	149.4	150.5	151.5	152.6	153.8	155.0	156.3	157.6	159.0	160.6	162.3	164.1	166.3	168.8	0.
33.0	149.5	150.3	151.2	152.0	152.9	153.8	154.7	155.7	156.6	157.7	158.7	159.8	161.0	162.3	163.6	165.1	166.6
145.0	145.8	146.7	147.7	148.6	149.6	150.6	151.7	152.8	153.9	155.1	156.1	157.7	159.1	160.7	162.3	164.2	0.
33.5	148.3	149.0	149.8	150.6	151.4	152.3	153.1	154.0	154.9	155.9	156.9	157.9	158.9	160.0	161.2	162.4	163.8
143.4	144.3	145.1	146.0	146.9	147.8	148.7	149.7	150.7	151.8	152.9	154.0	155.2	156.5	157.8	159.2	160.7	0.
34.0	147.1	147.8	148.6	149.3	150.1	150.9	151.7	152.5	153.4	154.3	155.2	156.1	157.1	158.1	159.1	160.2	161.4
142.0	142.8	143.6	144.6	145.3	146.1	147.0	147.7	148.6	149.4	150.8	151.9	153.0	154.1	155.3	156.6	157.9	0.
34.5	146.0	146.7	147.4	148.1	148.9	149.6	150.4	151.2	152.0	152.8	153.6	154.5	155.4	156.3	157.3	158.3	159.3
140.7	141.4	142.2	143.0	143.8	144.6	145.4	146.3	147.1	148.1	149.0	150.0	151.0	152.0	153.1	154.2	155.4	0.
35.0	144.9	145.6	146.3	147.0	147.7	148.4	149.2	149.9	150.7	151.4	152.2	153.1	153.9	154.7	155.6	156.6	157.5
139.4	140.1	140.8	141.6	142.3	143.1	143.9	144.7	145.5	146.4	147.4	148.2	149.1	150.1	151.1	152.1	153.2	0.
35.5	143.9	144.6	145.3	145.9	146.6	147.3	148.0	148.7	149.4	150.2	150.9	151.7	152.5	153.3	154.1	155.0	155.9
138.2	138.9	139.6	140.3	141.0	141.7	142.5	143.3	144.0	144.8	145.7	146.5	147.4	148.3	149.2	150.2	151.2	0.
36.0	143.0	143.6	144.3	144.9	145.6	146.2	146.9	147.6	148.3	149.0	149.7	150.4	151.0	152.0	152.7	153.5	154.4
137.0	137.7	138.4	139.0	139.7	140.4	141.1	141.9	142.6	143.4	144.2	145.0	145.8	146.6	147.5	148.4	149.3	0.
36.5	142.1	142.7	143.3	144.0	144.6	145.2	145.9	146.5	147.2	147.9	148.6	149.3	150.0	150.7	151.5	152.2	153.0
135.9	136.6	137.2	137.9	138.5	139.2	139.9	140.6	141.3	142.0	142.8	143.5	144.3	145.1	145.9	146.7	147.6	0.
37.0	141.3	141.9	142.5	143.1	143.7	144.3	144.9	145.5	146.2	146.8	147.5	148.2	148.8	149.5	150.3	151.0	151.7
134.9	135.5	136.1	136.7	137.4	138.0	138.7	139.5	140.0	140.7	141.4	142.1	142.9	143.6	144.4	145.2	146.0	0.
37.5	140.5	141.0	141.6	142.2	142.8	143.4	144.0	144.6	145.2	145.8	146.5	147.1	147.8	148.4	149.1	149.8	150.5
133.9	134.4	135.0	135.6	136.3	136.9	137.5	138.0	138.8	139.5	140.1	140.8	141.5	142.3	143.0	143.8	144.5	0.
38.0	139.7	140.2	140.8	141.4	141.9	142.5	143.1	143.7	144.3	144.9	145.5	146.1	146.8	147.4	148.1	148.7	149.4
132.9	133.5	134.0	134.6	135.2	135.9	136.4	137.0	137.6	138.3	138.9	139.6	140.3	141.0	141.7	142.4	143.1	0.
38.5	139.0	139.5	140.0	140.6	141.2	141.7	142.3	142.9	143.4	144.0	144.6	145.2	145.8	146.4	147.1	147.7	148.3
131.9	132.5	133.0	133.6	134.2	134.8	135.3	135.9	136.5	137.0	137.6	138.3	138.9	139.1	139.7	140.4	141.1	141.8
39.0	138.2	138.8	139.3	139.8	140.4	140.9	141.5	142.0	142.6	143.2	143.8	144.3	144.9	145.5	146.1	146.7	147.4
131.0	131.6	132.1	132.6	133.2	133.8	134.3	134.9	135.5	136.1	136.7	137.3	137.9	138.5	139.2	140.0	140.5	141.2
39.5	137.6	138.1	138.6	139.1	139.7	140.2	140.7	141.3	141.8	142.4	142.9	143.5	144.1	144.6	145.2	145.8	146.4
130.2	130.7	131.2	131.7	132.3	132.8	133.3	133.9	134.5	135.0	135.6	136.2	136.8	137.4	138.0	138.6	139.3	0.

## SCAN NADIR ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) FOR BETA=90.0DEG

	180	170	160	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10	0
40.0	50.0	50.7	52.8	56.2	60.5	65.6	71.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	167.0	154.6	143.0	132.4	122.7	113.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
40.5	49.5	50.2	52.4	55.8	60.2	65.3	71.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	166.9	154.4	142.8	132.2	122.5	113.7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
41.0	49.0	49.8	51.9	55.4	59.8	65.1	70.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	166.8	154.3	142.6	132.0	122.3	113.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
41.5	48.5	49.3	51.5	55.0	59.5	64.8	70.7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	166.8	154.1	142.4	131.8	122.1	113.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
42.0	48.0	48.8	51.0	54.6	59.2	64.5	70.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	166.7	153.9	142.2	131.5	121.9	113.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
42.5	47.5	48.3	50.6	54.2	58.8	64.3	70.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	166.5	153.7	141.9	131.3	121.7	113.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
43.0	47.0	47.8	50.1	53.8	58.5	64.0	70.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	166.4	153.5	141.7	131.1	121.5	112.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
43.5	46.5	47.3	49.7	53.4	58.2	63.7	69.9	76.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	166.3	153.4	141.5	130.8	121.3	112.7	104.8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
44.0	46.0	46.8	49.2	53.0	57.8	63.5	69.7	76.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	166.2	153.2	141.2	130.6	121.1	112.6	104.7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
44.5	45.5	46.3	48.8	52.6	57.5	63.2	69.5	76.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	166.1	153.0	141.0	130.4	120.9	112.4	104.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
45.0	45.0	45.9	48.4	52.2	57.2	63.0	69.3	76.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	166.0	152.8	140.8	130.1	120.7	112.2	104.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
45.5	44.5	45.4	47.9	51.9	56.9	62.7	69.1	75.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	165.9	152.6	140.5	129.9	120.5	112.0	104.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
46.0	44.0	44.9	47.5	51.5	56.6	62.5	68.9	75.8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	165.8	152.3	140.3	129.6	120.2	111.9	104.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
46.5	43.5	44.4	47.0	51.1	56.2	62.2	68.7	75.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	165.6	152.1	140.0	129.4	120.0	111.7	104.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
47.0	43.0	43.9	46.6	50.7	55.9	62.0	68.6	75.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	165.5	151.9	139.8	129.1	119.8	111.5	103.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
47.5	42.5	43.4	46.1	50.3	55.6	61.7	68.4	75.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	165.4	151.7	139.5	128.8	119.5	111.3	103.8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
48.0	42.0	43.0	45.7	49.9	55.3	61.5	68.2	75.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	165.2	151.5	139.2	128.6	119.3	111.1	103.7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
48.5	41.5	42.5	45.3	49.6	55.0	61.2	68.0	75.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	165.1	151.2	138.9	128.3	119.1	110.9	103.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
49.0	41.0	42.0	44.8	49.2	54.7	61.0	67.8	75.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	165.0	151.0	138.7	128.0	118.8	110.7	103.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
49.5	40.5	41.5	44.4	48.8	54.4	60.7	67.7	74.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	164.8	150.7	138.4	127.7	118.6	110.6	103.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
50.0	40.0	41.0	44.0	48.4	54.1	60.5	67.5	74.8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	164.7	150.5	138.1	127.5	118.3	110.4	103.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
50.5	39.5	40.5	43.5	48.1	53.8	60.3	67.3	74.7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	164.5	150.2	137.8	127.2	118.1	110.2	103.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
51.0	39.0	40.1	43.1	47.7	53.5	60.0	67.1	74.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	164.3	150.0	137.5	126.9	117.8	110.0	102.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
51.5	38.5	39.6	42.7	47.3	53.2	59.8	67.0	74.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	164.2	149.7	137.2	126.6	117.6	109.8	102.8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
52.0	38.0	39.1	42.2	47.0	52.9	59.6	66.8	74.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	164.0	149.4	136.8	126.3	117.3	109.6	102.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
52.5	37.5	38.6	41.8	46.6	52.6	59.3	66.6	74.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	163.8	149.1	136.5	126.0	117.1	109.4	102.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
53.0	37.0	38.1	41.4	46.2	52.3	59.1	66.5	74.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	163.7	148.8	136.2	125.6	116.8	109.2	102.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
53.5	36.5	37.7	40.9	45.9	52.0	58.9	66.3	74.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	163.5	148.5	135.9	125.3	116.5	109.0	102.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
54.0	36.0	37.2	40.5	45.5	51.7	58.7	66.1	73.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	163.3	148.2	135.5	125.0	116.3	108.7	102.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
54.5	35.5	36.7	40.1	45.2	51.4	58.4	66.0	73.8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	163.1	147.9	135.2	124.7	116.0	108.5	101.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
55.0	35.0	36.2	39.7	44.8	51.1	58.2	65.8	73.7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	162.9	147.6	134.8	124.4	115.7	108.3	101.8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
55.5	34.5	35.7	39.2	44.5	50.9	58.0	65.7	73.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	162.7	147.3	134.5	124.0	115.4	108.1	101.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
56.0	34.0	35.3	38.8	44.1	50.6	57.8	65.5	73.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	162.5	146.9	134.1	123.7	115.1	107.9	101.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
56.5	33.5	34.8	38.4	43.8	50.3	57.6	65.4	73.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	162.3	146.6	133.7	123.3	114.9	107.7	101.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
57.0	33.0	34.3	38.0	43.4	50.0	57.4	65.2	73.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	162.1	146.2	133.3	123.0	114.6	107.5	101.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
57.5	32.5	33.8	37.6	43.1	49.8	57.2	65.1	73.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	161.8	145.9	132.9	122.6</td														

## SPIN ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) AT THE HORIZON FOR BETA=90.0DEG

28.00	28.25	28.50	28.75	29.00	29.25	29.50	29.75	30.00	30.25	30.50	30.75	31.00	31.25	31.50	31.75	32.00	
40.0	136.9	137.4	137.9	138.4	139.0	139.5	140.0	140.5	141.1	141.6	142.1	142.7	143.3	143.8	144.4	145.5	
	129.3	129.8	130.3	130.8	131.3	131.9	132.4	132.9	133.5	134.0	134.6	135.2	135.7	136.3	136.9	137.5	138.1
40.5	136.3	136.8	137.3	137.8	138.3	138.8	139.3	139.8	140.3	140.9	141.4	141.9	142.5	143.0	143.6	144.1	144.7
	128.5	129.0	129.5	130.0	130.5	131.0	131.5	132.0	132.5	133.1	133.6	134.2	134.7	135.3	135.8	136.4	137.0
41.0	135.7	136.2	136.7	137.2	137.6	138.1	138.6	139.1	139.7	140.2	140.7	141.2	141.7	142.3	142.8	143.3	143.9
	127.7	128.2	128.7	129.1	129.6	130.1	130.6	131.1	131.6	132.1	132.7	133.2	133.7	134.3	134.8	135.4	136.0
41.5	135.1	135.6	136.1	136.5	137.0	137.5	138.0	138.5	139.0	140.0	140.5	141.0	141.5	142.0	142.6	143.1	143.9
	126.9	127.4	127.9	128.3	128.9	129.3	129.8	130.2	130.7	131.2	131.7	132.3	132.8	133.3	133.8	134.4	134.9
42.0	134.6	135.0	135.5	136.0	136.4	136.9	137.4	137.9	138.4	138.8	139.3	139.8	140.3	140.8	141.3	141.9	142.4
	126.2	126.6	127.1	127.5	128.0	128.5	128.9	129.4	129.9	130.4	130.9	131.4	131.9	132.4	133.4	133.9	134.4
42.5	134.0	134.5	134.9	135.4	135.9	136.3	136.8	137.3	137.7	138.2	138.7	139.2	139.7	140.2	140.7	141.2	141.7
	125.5	125.9	126.3	126.8	127.2	127.7	128.6	129.1	129.5	130.0	130.5	131.0	131.5	132.0	132.5	133.0	133.5
43.0	133.5	133.9	134.4	134.9	135.3	135.8	136.2	136.7	137.2	137.6	138.1	138.6	139.0	139.5	140.0	140.5	141.0
	124.8	125.2	125.6	126.0	126.5	126.9	127.4	127.8	128.3	128.7	129.2	129.6	130.1	130.6	131.1	131.6	132.1
43.5	133.0	133.4	133.9	134.3	134.8	135.2	135.7	136.1	136.6	137.0	137.5	138.0	138.4	138.9	139.4	139.9	140.3
	124.1	124.5	124.9	125.3	125.7	126.2	126.6	127.0	127.5	128.9	129.4	129.8	130.0	130.7	131.2	131.6	132.1
44.0	132.5	133.0	133.4	133.8	134.3	134.7	135.1	135.6	136.0	136.5	136.9	137.4	137.9	138.3	138.8	139.2	139.7
	123.4	123.8	124.2	124.6	125.0	125.4	125.9	126.3	126.7	127.1	127.6	128.0	128.5	128.9	129.4	130.3	130.8
44.5	132.1	132.5	132.9	133.3	133.7	134.2	134.6	135.1	135.5	136.0	136.4	136.8	137.3	137.7	138.2	138.7	139.1
	122.8	123.1	123.5	123.9	124.3	124.7	125.2	125.6	126.0	126.4	126.8	127.3	127.7	128.1	128.6	129.0	129.5
45.0	131.6	132.0	132.4	132.9	133.3	133.7	134.1	134.6	135.0	135.4	135.9	136.3	136.8	137.2	137.6	138.1	138.5
	122.1	122.5	122.9	123.3	123.7	124.1	124.5	124.9	125.3	125.7	126.1	126.5	126.9	127.4	127.8	128.2	128.7
45.5	131.2	131.6	132.0	132.4	132.8	133.2	133.7	134.1	134.5	134.9	135.4	135.8	136.2	136.7	137.1	137.5	138.0
	121.5	121.9	122.2	122.6	123.0	123.4	123.8	124.2	124.6	125.0	125.4	125.8	126.2	126.6	127.0	127.5	127.9
46.0	130.7	131.1	131.6	132.0	132.4	132.8	133.2	133.6	134.0	134.5	134.9	135.3	135.7	136.2	136.6	137.0	137.4
	120.9	121.3	121.6	122.0	122.4	122.7	123.1	123.5	123.9	124.3	124.7	125.1	125.5	125.9	126.3	126.7	127.1
46.5	130.3	130.7	131.1	131.5	131.9	132.3	132.8	133.2	133.6	134.0	134.4	134.8	135.2	135.7	136.1	136.5	136.9
	120.3	120.7	121.0	121.4	121.7	122.1	122.5	122.8	123.2	123.6	124.0	124.4	124.8	125.2	125.6	126.0	126.4
47.0	129.9	130.3	130.7	131.1	131.5	131.9	132.3	132.7	133.1	133.5	133.9	134.4	134.8	135.2	135.6	136.0	136.4
	119.7	120.1	120.4	120.8	121.1	121.5	121.8	122.2	122.6	123.3	123.7	124.1	124.5	124.9	125.2	125.6	126.0
47.5	129.6	129.9	130.3	130.7	131.1	131.5	131.9	132.3	132.7	133.1	133.5	133.9	134.3	134.7	135.1	135.5	136.0
	119.2	119.5	119.9	120.2	120.5	120.9	121.2	121.6	122.3	122.7	123.0	123.4	123.8	124.2	124.5	124.9	125.3
48.0	129.2	129.6	129.9	130.3	130.7	131.1	131.5	131.9	132.3	132.7	133.1	133.5	133.9	134.3	134.7	135.1	135.5
	118.6	118.9	119.3	119.6	119.9	120.3	120.6	121.0	121.3	121.7	122.0	122.4	122.8	123.1	123.5	123.9	124.2
48.5	128.8	129.2	129.6	130.0	130.3	130.7	131.1	131.5	131.9	132.3	132.7	133.1	133.4	133.8	134.2	134.6	135.0
	118.1	118.4	118.7	119.0	119.3	119.7	120.0	120.4	120.8	121.2	121.6	122.0	122.4	122.8	123.2	123.6	124.0
49.0	128.5	128.8	129.2	129.6	130.0	130.4	130.7	131.1	131.5	131.9	132.3	132.6	133.0	133.4	133.8	134.2	134.6
	117.5	117.8	118.2	118.5	118.8	119.1	119.5	119.8	120.1	120.5	120.8	121.1	121.5	121.8	122.2	122.5	122.9
49.5	128.1	128.5	128.9	129.2	129.6	130.0	130.4	130.7	131.1	131.5	131.9	132.3	132.6	133.0	133.4	133.8	134.2
	117.0	117.3	117.6	117.9	118.3	118.6	118.9	119.2	119.5	119.8	120.2	120.5	120.9	121.2	121.6	122.3	122.6
50.0	127.8	128.2	128.5	128.9	129.3	129.6	130.0	130.4	130.7	131.1	131.5	131.9	132.2	132.6	133.0	133.4	133.8
	116.5	116.8	117.1	117.4	117.7	118.0	118.3	118.6	118.9	119.2	119.5	119.8	120.3	120.6	121.1	121.6	122.1
50.5	127.5	127.8	128.2	128.6	128.9	129.3	129.7	130.0	130.4	130.8	131.1	131.5	131.9	132.2	132.6	133.0	133.4
	116.0	116.3	116.6	116.9	117.2	117.5	117.8	118.1	118.4	118.7	119.0	119.4	119.7	120.0	120.3	120.7	121.0
51.0	127.2	127.5	127.9	128.2	128.6	129.0	129.3	129.7	130.0	130.4	130.8	131.1	131.5	131.9	132.2	132.6	133.0
	115.5	115.8	116.1	116.4	116.7	117.0	117.3	117.6	117.9	120.1	120.4	120.8	121.1	121.5	121.8	122.2	122.6
51.5	126.9	127.2	127.6	127.9	128.3	128.6	129.0	129.3	129.7	130.1	130.4	130.8	131.2	131.5	131.9	132.3	132.6
	115.0	115.3	115.6	115.9	116.2	116.5	116.7	117.0	117.3	117.6	117.9	118.2	118.6	118.9	119.2	119.5	119.8
52.0	126.6	126.9	127.3	127.6	128.0	128.3	128.7	129.0	129.4	129.7	130.1	130.5	130.8	131.2	131.5	131.9	132.3
	114.5	114.8	115.1	115.4	115.7	116.0	116.2	116.5	116.8	117.1	117.4	117.7	118.0	118.3	118.6	119.0	119.2
52.5	126.3	126.6	127.0	127.3	127.6	128.0	128.4	128.7	129.1	129.4	129.8	130.1	130.5	130.8	131.2	131.6	131.9
	114.1	114.3	114.6	114.9	115.2	115.5	115.7	116.0	116.3	116.6	116.9	117.2	117.5	117.8	118.1	118.5	118.8
53.0	126.0	126.3	126.7	127.0	127.4	127.8	128.1	128.5	128.9	129.3	129.8	130.2	130.5	130.9	131.2	131.6	131.9
	113.6	113.9	114.2	114.4	114.7	115.0	115.2	115.5	115.8	116.1	116.4	116.8	117.2	117.5	117.8	118.1	118.4
53.5	125.7	126.1	126.4	126.8	127.1	127.4	127.8	128.1	128.5	128.9	129.2	129.5	129.8	130.2	130.5	130.9	131.2
	113.2	113.4	113.7	114.0	114.2	114.5	114.7	115.0	115.3	115.6	115.8	116.1	116.4	116.7	117.0	117.3	117.5
54.0	125.5	125.8	126.1	126.5	126.8	127.2	127.5	127.8	128.2	128.5	128.9	129.2	129.5	129.9	130.2	130.6	130.9
	112.7	113.0	113.2	113.5	113.8	114.0	114.3	114.5	114.8	115.1	115.3	115.6	115.9	116.2	116.4	116.7	117.0
54.5	125.2	125.5	125.9	126.2	126.6	126.9	127.2	127.6	127.9	128.2	128.6	128.9	129.2	129.5	129.8	130.1	130.6
	112.3	112.5	112.8	113.0	113.3	113.5	113.8	114.1	114.4	114.8	115.1	115.4	115.6	115.			

## SCAN NADIR ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) FOR BETA=90.0DEG

	180	170	160	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10	0
60.0	30.0	31.5	35.5	41.4	48.4	56.2	64.3	72.8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	160.6	143.9	130.9	120.8	112.8	106.1	100.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
60.5	29.5	31.0	35.1	41.1	48.2	56.0	64.2	72.7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	160.3	143.5	130.5	120.4	112.5	105.9	100.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
61.0	29.0	30.5	34.7	40.8	47.9	55.8	64.1	72.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	160.0	143.1	130.0	120.0	112.1	105.6	100.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
61.5	28.5	30.1	34.3	40.4	47.7	55.6	63.9	72.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	159.7	142.7	129.6	119.6	111.8	105.4	99.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
62.0	28.0	29.6	33.9	40.1	47.4	55.4	63.8	72.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	159.4	142.2	129.1	119.2	111.5	105.2	99.7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
62.5	27.5	29.1	33.5	39.8	47.2	55.2	63.7	72.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	159.1	141.8	128.7	118.8	111.2	104.9	99.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
63.0	27.0	28.7	33.1	39.5	47.0	55.1	63.5	72.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	158.8	141.3	128.2	118.4	110.9	104.7	99.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
63.5	26.5	28.2	32.8	39.2	46.7	54.9	63.4	72.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	158.4	140.8	127.7	118.8	110.5	104.4	99.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
64.0	26.0	27.7	32.4	38.9	46.5	54.7	63.3	72.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	158.1	140.3	127.2	117.6	110.2	104.2	99.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
64.5	25.5	27.3	32.0	38.6	46.3	54.5	63.2	72.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	157.7	139.8	126.7	117.2	109.9	104.0	98.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
65.0	25.0	26.8	31.6	38.3	46.0	54.4	63.1	71.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	157.4	139.3	126.2	116.7	109.5	103.7	98.7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
65.5	24.5	26.3	31.2	38.0	45.8	54.2	62.9	71.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	157.0	139.8	125.7	116.3	109.2	103.5	98.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
66.0	24.0	25.9	30.9	37.7	45.6	54.0	62.8	71.8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	156.6	138.2	125.2	115.9	108.8	103.2	98.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
66.5	23.5	25.4	30.5	37.4	45.4	53.9	62.7	71.7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	156.1	137.6	124.6	115.4	108.5	103.0	98.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
67.0	23.0	25.0	30.1	37.1	45.2	53.7	62.6	71.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	155.7	137.0	124.1	115.0	108.2	102.7	98.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
67.5	22.5	24.5	29.8	36.9	44.9	53.6	62.5	71.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	155.3	136.4	123.5	114.5	107.8	102.5	97.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
68.0	22.0	24.1	29.4	36.6	44.7	53.4	62.4	71.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	154.8	135.8	123.0	114.1	107.4	102.2	97.8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
68.5	21.5	23.6	29.0	36.3	44.5	53.3	62.3	71.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	154.3	135.2	122.4	113.6	107.1	101.9	97.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
69.0	21.0	23.2	28.7	36.0	44.3	53.1	62.2	71.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	153.8	134.6	121.8	113.1	106.7	101.7	97.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
69.5	20.5	22.7	28.3	35.8	44.1	53.0	62.1	71.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	153.3	133.9	121.2	112.7	106.4	101.4	97.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
70.0	20.0	22.3	28.0	35.5	44.0	52.8	62.0	71.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	152.7	133.2	120.6	112.2	106.0	101.2	97.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
70.5	19.5	21.8	27.7	35.3	43.8	52.7	61.9	71.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	152.2	132.5	120.0	111.7	105.6	100.9	96.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
71.0	19.0	21.4	27.3	35.0	43.6	52.6	61.8	71.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	151.6	131.6	119.4	111.2	105.3	100.6	96.8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
71.5	18.5	20.9	27.0	34.8	43.4	52.4	61.7	71.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	150.9	131.1	118.8	110.7	104.9	100.4	96.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
72.0	18.0	20.5	26.7	34.5	43.2	52.3	61.6	71.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	150.3	130.3	118.2	110.2	104.5	100.1	96.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
72.5	17.5	20.1	26.3	34.3	43.1	52.2	61.5	71.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	149.6	129.6	117.5	109.7	104.2	99.8	96.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
73.0	17.0	19.6	26.0	34.1	42.9	52.1	61.4	70.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	148.9	128.1	116.9	109.2	103.8	99.6	96.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
73.5	16.5	19.2	25.7	33.9	42.7	52.0	61.4	70.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	148.0	128.0	116.2	108.7	103.4	99.3	95.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
74.0	16.0	18.8	25.4	33.6	42.6	51.8	61.3	70.8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	147.4	127.1	115.5	108.2	103.0	99.0	95.7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
74.5	15.5	18.4	25.1	33.4	42.4	51.7	61.2	70.8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	146.6	126.3	114.8	107.7	102.6	98.8	95.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
75.0	15.0	18.0	24.8	33.2	42.3	51.6	61.1	70.7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	145.7	125.4	114.1	107.1	102.3	98.5	95.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
75.5	14.5	17.6	24.5	33.0	42.1	51.5	61.0	70.7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	144.8	124.5	113.4	106.4	101.9	98.2	95.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
76.0	14.0	17.1	24.2	32.8	42.0	51.4	61.0	70.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	143.9	123.6	112.7	106.1	101.5	98.0	95.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
76.5	13.5	16.7	24.0	32.6	41.9	51.3	60.9	70.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	142.9	122.7	112.0	105.5	101.1	97.7	94.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
77.0	13.0	16.3	23.7	32.5	41.7	51.2	60.8	70.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	141.9	121.7	111.3	105.5	100.7	97.4	94.7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
77.5	12.5	16.0	23.4	32.3	41.6	51.1	60.8	70.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	180.0	140.8	120.7	110.6															

## SPIN ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) AT THE HORIZON FOR BETA=90.0DEG

28.00	28.25	28.50	28.75	29.00	29.25	29.50	29.75	30.00	30.25	30.50	30.75	31.00	31.25	31.50	31.75	32.00
60.0	122.8	123.1	123.4	123.7	124.0	124.3	124.7	125.0	125.3	125.6	125.9	126.2	126.5	126.8	127.1	127.7
	107.9	108.1	108.3	108.5	108.7	108.9	109.1	109.3	109.5	109.7	109.9	110.1	110.3	110.5	110.7	111.1
60.5	122.6	122.9	123.2	123.5	123.9	124.2	124.5	124.8	125.1	125.4	125.7	126.0	126.3	126.6	126.9	127.2
	107.5	107.7	107.9	108.1	108.3	108.5	108.7	108.9	109.1	109.3	109.5	109.7	109.9	110.1	110.3	110.5
61.0	122.5	122.8	123.1	123.4	123.7	124.0	124.3	124.6	124.9	125.2	125.5	125.8	126.1	126.4	126.7	127.3
	107.1	107.3	107.5	107.7	107.9	108.1	108.3	108.5	108.7	108.9	109.1	109.3	109.5	109.7	109.9	110.1
61.5	122.3	122.6	122.9	123.2	123.5	123.8	124.1	124.4	124.7	125.0	125.3	125.6	125.9	126.2	126.5	127.1
	106.8	107.0	107.3	107.5	107.7	107.9	108.1	108.3	108.5	108.7	108.9	109.0	109.2	109.4	109.6	109.8
62.0	122.1	122.4	122.7	123.0	123.3	123.6	123.9	124.2	124.5	124.8	125.1	125.4	125.7	126.0	126.3	126.9
	106.4	106.6	107.0	107.3	107.5	107.7	107.9	108.1	108.3	108.5	108.7	108.9	109.0	109.2	109.4	109.6
62.5	122.0	122.2	122.5	122.8	123.1	123.4	123.7	124.0	124.3	124.6	124.9	125.2	125.5	125.8	126.4	126.7
	106.1	106.2	106.4	106.6	106.8	106.9	107.1	107.3	107.5	107.7	107.9	108.0	108.2	108.4	108.6	109.0
63.0	121.8	122.1	122.4	122.7	123.0	123.3	123.5	123.8	124.1	124.4	124.7	125.0	125.3	125.6	125.9	126.2
	105.7	105.9	106.1	106.2	106.4	106.6	106.8	107.0	107.3	107.5	107.7	107.9	108.0	108.2	108.4	108.6
63.5	121.6	121.9	122.2	122.5	122.8	123.1	123.4	123.7	124.0	124.3	124.6	124.8	125.1	125.4	125.7	126.0
	105.9	106.1	106.3	106.5	106.7	106.9	107.1	107.3	107.5	107.7	107.9	108.0	108.2	108.4	108.6	108.8
64.0	121.5	121.8	122.1	122.4	122.6	122.9	123.2	123.5	123.8	124.1	124.4	124.7	125.0	125.3	125.5	125.8
	105.0	105.2	105.4	105.5	105.7	105.9	106.0	106.2	106.4	106.6	106.8	107.0	107.2	107.4	107.6	107.7
64.5	121.3	121.6	121.9	122.2	122.5	122.8	123.1	123.4	123.6	123.9	124.2	124.5	124.8	125.1	125.4	125.7
	104.7	104.8	105.0	105.2	105.4	105.5	105.7	105.8	106.0	106.2	106.3	106.5	106.7	106.8	107.0	107.2
65.0	121.2	121.5	121.8	122.1	122.3	122.6	122.9	123.2	123.5	123.8	124.1	124.3	124.6	124.9	125.2	125.5
	104.4	104.5	104.7	104.8	105.0	105.1	105.3	105.5	105.6	105.8	105.9	106.1	106.3	106.4	106.6	106.9
65.5	121.1	121.3	121.6	121.9	122.2	122.5	122.8	123.0	123.3	123.6	123.9	124.2	124.5	124.8	125.0	125.3
	104.0	104.2	104.3	104.5	104.6	104.8	104.9	105.1	105.3	105.4	105.6	105.7	105.9	106.1	106.2	106.5
66.0	120.9	121.2	121.5	121.8	122.1	122.3	122.6	122.9	123.2	123.5	123.8	124.0	124.3	124.6	124.9	125.2
	103.7	103.8	104.0	104.1	104.3	104.4	104.6	104.7	104.9	105.0	105.2	105.4	105.5	105.7	105.8	106.0
66.5	120.8	121.1	121.4	121.6	121.9	122.2	122.5	122.8	123.0	123.3	123.6	123.9	124.2	124.5	124.7	125.0
	103.4	103.5	103.7	103.8	103.9	104.1	104.2	104.4	104.5	104.7	104.8	105.0	105.1	105.3	105.5	105.8
67.0	120.7	120.9	121.2	121.5	121.8	122.1	122.3	122.6	122.9	123.2	123.5	123.7	124.0	124.3	124.6	124.9
	103.0	103.2	103.3	103.5	103.6	103.8	103.9	104.0	104.2	104.3	104.5	104.6	104.8	104.9	105.1	105.4
67.5	120.5	120.8	121.1	121.4	121.7	122.0	122.2	122.5	122.8	123.0	123.3	123.6	123.9	124.2	124.4	124.7
	102.7	102.9	103.0	103.1	103.3	103.4	103.6	103.7	103.8	104.0	104.1	104.3	104.4	104.6	104.7	104.9
68.0	120.4	120.7	121.0	121.2	121.5	121.8	122.1	122.4	122.6	122.9	123.2	123.5	123.7	124.0	124.3	124.6
	102.4	102.5	102.7	102.8	102.9	103.1	103.2	103.4	103.5	103.6	103.8	103.9	104.0	104.2	104.3	104.6
68.5	120.3	120.6	120.9	121.1	121.4	121.7	122.0	122.2	122.5	122.8	123.1	123.3	123.6	123.9	124.2	124.4
	102.1	102.2	102.3	102.5	102.6	102.7	102.9	103.0	103.1	103.3	103.4	103.6	103.7	104.0	104.1	104.2
69.0	120.2	120.5	120.7	121.0	121.3	121.6	121.8	122.1	122.4	122.7	122.9	123.2	123.5	123.8	124.0	124.6
	101.8	101.9	102.0	102.2	102.3	102.4	102.5	102.7	102.8	102.9	103.1	103.2	103.3	103.6	103.7	103.9
69.5	120.1	120.4	120.6	120.9	121.2	121.4	121.7	122.0	122.3	122.5	122.8	123.1	123.4	123.6	123.9	124.2
	101.5	101.6	101.7	101.8	102.0	102.1	102.2	102.3	102.5	102.6	102.7	102.9	103.0	103.1	103.2	103.4
70.0	120.0	120.2	120.5	120.8	121.1	121.3	121.6	121.9	122.1	122.4	122.7	123.0	123.2	123.5	123.8	124.3
	101.2	101.3	101.4	101.5	101.6	101.8	101.9	102.0	102.1	102.3	102.4	102.5	102.6	102.8	103.0	103.1
70.5	119.9	120.1	120.4	120.7	121.0	121.2	121.5	121.8	122.0	122.3	122.6	122.8	123.1	123.4	123.7	124.2
	100.9	101.0	101.1	101.2	101.3	101.4	101.6	101.7	101.8	101.9	102.0	102.2	102.3	102.4	102.5	102.7
71.0	119.8	120.0	120.3	120.6	120.8	121.1	121.4	121.7	122.0	122.2	122.5	122.7	123.0	123.3	123.5	123.8
	100.5	100.7	100.8	100.9	101.1	101.2	101.3	101.5	101.6	101.7	101.8	101.9	102.1	102.2	102.3	102.4
71.5	119.7	119.9	120.2	120.5	120.7	121.0	121.3	121.6	121.8	122.1	122.4	122.6	122.9	123.2	123.4	123.7
	100.4	100.6	100.8	100.9	101.0	101.1	101.3	101.5	101.6	101.7	101.8	101.9	102.1	102.2	102.3	102.4
72.0	119.6	119.8	120.1	120.4	120.6	120.9	121.2	121.4	121.7	122.0	122.3	122.5	122.8	123.1	123.3	123.6
	99.9	100.1	100.3	100.4	100.5	100.6	100.7	100.8	100.9	101.0	101.1	101.3	101.4	101.5	101.6	101.7
72.5	119.5	119.8	120.0	120.3	120.6	120.8	121.1	121.4	121.6	121.9	122.2	122.4	122.7	123.0	123.2	123.5
	99.7	99.8	99.9	100.0	100.1	100.2	100.3	100.4	100.5	100.6	100.7	100.8	100.9	101.0	101.1	101.3
73.0	119.4	119.7	119.9	120.2	120.5	120.7	121.0	121.3	121.5	121.8	122.1	122.3	122.6	122.9	123.1	123.7
	99.4	99.5	99.6	99.7	99.8	99.9	100.0	100.1	100.2	100.3	100.4	100.5	100.6	100.7	100.8	100.9
73.5	119.3	119.6	119.8	120.1	120.4	120.6	120.9	121.2	121.4	121.7	122.0	122.2	122.5	122.8	123.0	123.6
	99.1	99.2	99.3	99.4	99.5	99.6	99.7	99.8	99.9	100.0	100.1	100.2	100.3	100.4	100.5	100.6
74.0	119.2	119.5	119.8	120.0	120.3	120.6	120.8	121.1	121.3	121.6	121.9	122.1	122.4	122.7	123.0	123.5
	98.8	98.9	99.0	99.1	99.2	99.3	99.4	99.5	99.6	99.7	99.8	99.9	100.0	100.1	100.2	100.3
74.5	119.2	119.4	119.7	119.9	120.2	120.5	120.7	121.0	121.3	121.5	121.8	122.0	122.3	122.6	122.8	123.4
	98.5	98.6	98.7	98.8	98.9	99.0	99.1	99.2	99.3	99.4	99.5	99.6	99.7	99.8	99.9	100.0
75.0	119.1	119.3	119.6	119.8	120.1	120.4	120.7	121.0	121.3	121.6	121.9	122.1	122.4	122.7	123.0	123.3
	98.2	98.3	98.4	98.5	98.6	98.7	98.8	98.9	99.0	99.1	99.2	99.3	99.4	99.5	99.6	99.7
75.5	119.0	119.3	119.5	119.8	120.1	120.3	120.6	120.8	121.1	121.4	121.6	121.9	122.1	122.4	122.7	123.2
	97.9	98.0	98.1	98.2	98.3	98.4	98.5	98.6	98.7	98.8	98.9</					

SCAN NADIR ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) FOR BETA=90.0DEG

## SPIN ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) AT THE HORIZON FOR BETA=90.0DEG

28.0	28.25	28.50	28.75	29.00	29.25	29.50	29.75	30.00	30.25	30.50	30.75	31.00	31.25	31.50	31.75	32.00		
80.0	118.5	118.7	119.0	119.2	119.5	119.7	120.0	120.3	120.5	120.8	121.0	121.3	121.5	121.8	122.0	122.3	122.6	
95.4	95.4	95.5	95.6	95.6	95.7	95.7	95.8	95.8	95.9	96.0	96.0	96.1	96.2	96.3	96.3	96.3	96.3	
80.5	118.4	118.7	118.9	119.2	119.4	119.7	120.0	120.2	120.5	120.7	121.0	121.2	121.5	121.7	122.0	122.2	122.5	
95.1	95.2	95.2	95.3	95.3	95.4	95.4	95.5	95.5	95.6	95.7	95.7	95.8	95.8	95.9	95.9	96.0	96.0	
81.0	118.4	118.6	118.9	119.1	119.4	119.7	119.9	120.2	120.4	120.7	120.9	121.1	121.2	121.4	121.7	121.9	122.2	122.4
94.8	94.9	94.9	95.0	95.0	95.1	95.1	95.2	95.2	95.3	95.4	95.4	95.5	95.5	95.6	95.6	95.6	95.7	
81.5	118.3	118.6	118.8	119.1	119.4	119.6	119.9	120.1	120.4	120.6	120.9	121.1	121.4	121.6	121.9	122.1	122.4	
94.6	94.6	94.7	94.7	94.8	94.8	94.9	94.9	94.9	95.0	95.1	95.1	95.2	95.2	95.3	95.4	95.4	94.7	
82.0	118.3	118.6	118.8	119.1	119.3	119.6	119.8	120.1	120.3	120.6	120.8	121.1	121.3	121.6	121.8	122.1	122.4	
94.3	94.3	94.4	94.5	94.5	94.6	94.6	94.7	94.7	94.7	94.8	94.8	94.9	94.9	95.0	95.0	95.0	95.0	
82.5	118.3	118.5	118.8	119.0	119.3	119.5	119.8	120.0	120.3	120.5	120.8	121.0	121.3	121.6	121.8	122.1	122.3	
94.0	94.1	94.1	94.1	94.2	94.2	94.3	94.3	94.4	94.4	94.4	94.5	94.5	94.6	94.6	94.7	94.7	94.7	
83.0	118.2	118.5	118.7	119.0	119.2	119.5	119.7	120.0	120.2	120.5	120.8	121.0	121.3	121.5	121.8	122.0	122.3	
93.7	93.8	93.8	93.9	93.9	94.0	94.0	94.0	94.1	94.1	94.2	94.2	94.3	94.3	94.4	94.4	94.4	94.4	
83.5	118.2	118.4	118.7	119.0	119.2	119.5	119.7	120.0	120.2	120.5	120.7	121.0	121.2	121.5	121.7	122.0	122.2	
93.5	93.5	93.6	93.6	93.7	93.7	93.7	93.8	93.8	93.8	93.9	93.9	94.0	94.0	94.0	94.1	94.1	94.1	
84.0	118.2	118.4	118.7	118.9	119.2	119.4	119.7	119.9	120.2	120.4	120.7	120.9	121.2	121.4	121.7	121.9	122.2	
93.2	93.2	93.3	93.3	93.4	93.4	93.5	93.5	93.5	93.6	93.6	93.7	93.7	93.7	93.7	93.8	93.8	93.8	
84.5	118.1	118.4	118.6	118.9	119.1	119.4	119.7	119.9	120.2	120.4	120.7	120.9	121.2	121.4	121.7	121.9	122.2	
92.9	93.0	93.0	93.0	93.1	93.1	93.1	93.2	93.2	93.2	93.3	93.3	93.3	93.4	93.4	93.4	93.4	93.4	
85.0	118.1	118.4	118.6	118.9	119.1	119.4	119.6	119.9	120.1	120.4	120.6	120.9	121.1	121.4	121.6	121.9	122.1	
92.7	92.7	92.8	92.8	92.8	92.8	92.8	92.9	92.9	92.9	93.0	93.0	93.0	93.1	93.1	93.1	93.1	93.1	
85.5	118.1	118.3	118.6	118.8	119.1	119.3	119.6	119.9	120.1	120.4	120.6	120.9	121.1	121.4	121.6	121.9	122.1	
92.4	92.4	92.4	92.5	92.5	92.6	92.6	92.6	92.6	92.6	92.7	92.7	92.7	92.7	92.8	92.8	92.8	92.8	
86.0	118.1	118.3	118.6	118.8	119.1	119.3	119.6	119.8	120.1	120.3	120.6	120.8	121.1	121.3	121.6	121.8	122.1	
92.1	92.2	92.2	92.2	92.2	92.3	92.3	92.3	92.3	92.4	92.4	92.4	92.5	92.5	92.5	92.5	92.5	92.5	
86.5	118.1	118.3	118.6	118.8	119.1	119.3	119.6	119.8	120.1	120.3	120.6	120.8	121.1	121.3	121.6	121.8	122.1	
91.9	91.9	91.9	91.9	91.9	92.0	92.0	92.0	92.0	92.1	92.1	92.1	92.1	92.1	92.2	92.2	92.2	92.2	
87.0	118.0	118.3	118.5	118.8	119.0	119.3	119.5	119.8	120.0	120.3	120.5	120.8	121.0	121.3	121.5	121.8	122.0	
91.6	91.6	91.6	91.6	91.6	91.7	91.7	91.7	91.7	91.8	91.8	91.8	91.8	91.8	91.9	91.9	91.9	91.9	
87.5	118.0	118.3	118.5	118.8	119.0	119.3	119.5	119.8	120.0	120.3	120.5	120.8	121.0	121.3	121.5	121.8	122.0	
91.3	91.3	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.5	91.5	91.5	91.5	91.5	91.5	91.5	91.5	91.6	
88.0	118.0	118.3	118.5	118.8	119.0	119.3	119.5	119.8	120.0	120.3	120.5	120.8	121.0	121.3	121.5	121.8	122.0	
91.1	91.1	91.1	91.1	91.1	91.1	91.1	91.1	91.2	91.2	91.2	91.2	91.2	91.2	91.2	91.2	91.2	91.3	
88.5	118.0	118.3	118.5	118.8	119.0	119.3	119.5	119.8	120.0	120.3	120.5	120.8	121.0	121.3	121.5	121.8	122.0	
90.8	90.8	90.8	90.8	90.8	90.8	90.8	90.9	90.9	90.9	90.9	90.9	90.9	90.9	90.9	90.9	90.9	90.9	
89.0	118.0	118.3	118.5	118.8	119.0	119.3	119.5	119.8	120.0	120.3	120.5	120.8	121.0	121.3	121.5	121.8	122.0	
90.5	90.5	90.5	90.6	90.6	90.6	90.6	90.6	90.6	90.6	90.6	90.6	90.6	90.6	90.6	90.6	90.6	90.6	
89.5	118.0	118.3	118.5	118.8	119.0	119.3	119.5	119.8	120.0	120.3	120.5	120.8	121.0	121.3	121.5	121.8	122.0	
90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	
90.0	118.0	118.2	118.5	118.7	119.0	119.2	119.5	119.7	120.0	120.2	120.5	120.7	121.0	121.2	121.5	121.7	122.0	
90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	
90.5	118.0	118.3	118.5	118.8	119.0	119.3	119.5	119.8	120.0	120.3	120.5	120.8	121.0	121.3	121.5	121.8	122.0	
89.7	89.7	89.7	89.7	89.7	89.7	89.7	89.7	89.7	89.7	89.7	89.7	89.7	89.7	89.7	89.7	89.7	89.7	
91.0	118.0	118.3	118.5	118.8	119.0	119.3	119.5	119.8	120.0	120.3	120.5	120.8	121.0	121.3	121.5	121.8	122.0	
89.5	89.5	89.5	89.5	89.4	89.4	89.4	89.4	89.4	89.4	89.4	89.4	89.4	89.4	89.4	89.4	89.4	89.4	
91.5	118.0	118.3	118.5	118.8	119.0	119.3	119.5	119.8	120.0	120.3	120.5	120.8	121.0	121.3	121.5	121.8	122.0	
89.2	89.2	89.2	89.2	89.2	89.2	89.2	89.2	89.1	89.1	89.1	89.1	89.1	89.1	89.1	89.1	89.1	89.1	
92.0	118.0	118.3	118.5	118.8	119.0	119.3	119.5	119.8	120.0	120.3	120.5	120.8	121.0	121.3	121.5	121.8	122.0	
88.9	88.9	88.9	88.9	88.9	88.9	88.9	88.9	88.8	88.8	88.8	88.8	88.8	88.8	88.8	88.8	88.8	88.7	
92.5	118.0	118.3	118.5	118.8	119.0	119.3	119.5	119.8	120.0	120.3	120.5	120.8	121.0	121.3	121.5	121.8	122.0	
88.7	88.7	88.6	88.6	88.6	88.6	88.6	88.6	88.6	88.6	88.6	88.6	88.5	88.5	88.5	88.5	88.4	88.4	
93.0	118.0	118.3	118.5	118.8	119.0	119.3	119.5	119.8	120.0	120.3	120.5	120.8	121.0	121.3	121.5	121.8	122.0	
88.4	88.4	88.4	88.4	88.3	88.3	88.3	88.3	88.3	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.1	88.1	
93.5	118.1	118.3	118.6	118.8	119.1	119.3	119.6	119.8	120.1	120.3	120.6	120.8	121.0	121.3	121.6	121.8	122.1	
88.1	88.1	88.1	88.1	88.0	88.0	88.0	88.0	88.0	87.9	87.9	87.9	87.9	87.9	87.8	87.8	87.8	87.8	
94.0	118.1	118.3	118.6	118.8	119.1	119.3	119.6	119.8	120.1	120.3	120.6	120.8	121.1	121.3	121.6	121.8	122.1	
87.9	87.8	87.8	87.8	87.8	87.8	87.7	87.7	87.7	87.6	87.6	87.6	87.6	87.6	87.5	87.5	87.5	87.5	
94.5	118.1	118.3	118.6	118.8	119.1	119.3	119.6	119.9	120.1	120.4	120.6	120.9	121.2	121.4	121.6	121.9	122.1	
87.6	87.6	87.6	87.5	87.5	87.5	87.4	87.4	87.4	87.4	87.4	87.3	87.3	87.3	87.3	87.2	87.2	87.2	
95.0	118.1	118.4	118.6	118.9	119.1	119.4	119.6	119.9	120.1	120.4	120.6	120.9	121.2	121.5	121.7	122.0	122.2	
87.3	87.3	87.3	87.2	87.2	87.2	87.1	87.1	87.1	87.0	87.0	87.0	87.0	87.					

SCAN NADIR ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) FOR BETA=90.0DEG

## SPIN ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) AT THE HORIZON FOR BETA=90.0DEG

28.00	28.25	28.50	28.75	29.00	29.25	29.50	29.75	30.00	30.25	30.50	30.75	31.00	31.25	31.50	31.75	32.00	
100.0	118.5	118.7	119.0	119.2	119.5	119.7	120.0	120.3	120.5	120.8	121.0	121.3	121.5	121.8	122.0	122.3	122.6
84.6	84.6	84.5	84.4	84.4	84.3	84.3	84.2	84.2	84.1	84.0	84.0	83.9	83.9	83.8	83.7	83.7	83.7
100.5	118.5	118.8	119.0	119.3	119.5	119.8	120.1	120.3	120.6	120.8	121.1	121.3	121.6	121.8	122.1	122.4	122.6
84.3	84.3	84.2	84.2	84.1	84.0	84.0	83.9	83.9	83.8	83.7	83.7	83.6	83.5	83.5	83.4	83.3	83.0
101.0	118.6	118.8	119.1	119.3	119.6	119.9	120.1	120.4	120.6	120.9	121.1	121.4	121.6	121.9	122.2	122.4	122.6
84.1	84.0	83.9	83.9	83.8	83.8	83.7	83.6	83.6	83.5	83.4	83.4	83.3	83.2	83.2	83.1	83.0	83.0
101.5	118.6	118.9	119.1	119.4	119.7	119.9	120.2	120.4	120.7	120.9	121.2	121.5	121.7	122.0	122.2	122.5	122.7
83.8	83.7	83.7	83.6	83.5	83.5	83.4	83.3	83.3	83.2	83.1	83.0	83.0	82.9	82.8	82.8	82.7	82.7
102.0	118.7	118.9	119.2	119.5	119.7	120.0	120.2	120.5	120.7	121.0	121.3	121.5	121.8	122.0	122.3	122.5	122.8
83.5	83.4	83.4	83.3	83.2	83.2	83.1	83.0	83.0	82.9	82.8	82.7	82.7	82.6	82.5	82.4	82.4	82.4
102.5	118.7	119.0	119.3	119.5	119.8	120.0	120.3	120.5	120.8	121.1	121.3	121.6	121.8	122.1	122.4	122.6	122.9
83.2	83.2	83.1	83.0	82.9	82.9	82.8	82.6	82.6	82.5	82.4	82.3	82.3	82.2	82.2	82.1	82.0	82.0
103.0	118.8	119.1	119.3	119.6	119.8	120.1	120.4	120.6	120.9	121.1	121.4	121.7	121.9	122.2	122.4	122.7	122.9
82.9	82.9	82.8	82.7	82.6	82.6	82.5	82.4	82.3	82.3	82.2	82.1	82.0	81.9	81.9	81.8	81.7	81.7
103.5	118.9	119.1	119.4	119.6	119.9	120.2	120.4	120.7	120.9	121.2	121.5	121.7	122.0	122.2	122.5	122.8	123.0
82.7	82.6	82.5	82.4	82.4	82.3	82.2	82.1	82.0	82.0	81.9	81.8	81.7	81.6	81.5	81.5	81.4	81.4
104.0	118.9	119.2	119.5	119.7	120.0	120.2	120.5	120.8	121.0	121.3	121.5	121.8	122.1	122.3	122.6	122.8	123.1
82.4	82.3	82.2	82.1	82.0	81.9	81.8	81.7	81.6	81.6	81.5	81.4	81.3	81.2	81.1	81.0	81.0	81.0
104.5	119.0	119.3	119.5	119.8	120.1	120.3	120.6	120.8	121.1	121.4	121.6	121.9	122.1	122.4	122.7	122.9	123.2
82.1	82.0	81.9	81.8	81.8	81.7	81.6	81.5	81.4	81.3	81.2	81.1	81.1	81.0	80.9	80.8	80.7	80.7
105.0	119.1	119.3	119.6	119.9	120.1	120.4	120.7	120.9	121.2	121.4	121.7	122.0	122.2	122.5	122.8	123.0	123.3
81.8	81.7	81.6	81.5	81.5	81.4	81.3	81.2	81.1	81.0	80.9	80.8	80.7	80.6	80.5	80.5	80.4	80.4
105.5	119.2	119.4	119.7	119.9	120.2	120.5	120.7	121.0	121.3	121.5	121.8	122.0	122.3	122.6	122.8	123.1	123.4
81.5	81.4	81.3	81.2	81.2	81.1	81.0	80.9	80.9	80.8	80.7	80.6	80.5	80.4	80.3	80.2	80.1	80.0
106.0	119.2	119.5	119.8	120.0	120.3	120.6	120.8	121.1	121.3	121.6	121.9	122.1	122.4	122.7	122.9	123.2	123.5
81.2	81.1	81.0	80.9	80.9	80.8	80.7	80.6	80.5	80.4	80.3	80.2	80.1	80.0	79.9	79.8	79.7	79.7
106.5	119.3	119.6	119.8	120.1	120.4	120.6	120.9	121.2	121.4	121.7	122.0	122.2	122.5	122.8	123.0	123.3	123.6
80.9	80.8	80.7	80.6	80.5	80.5	80.4	80.3	80.2	80.1	80.0	79.8	79.7	79.6	79.5	79.4	79.3	79.3
107.0	119.4	119.7	119.9	120.2	120.5	120.7	121.0	121.3	121.5	121.8	122.1	122.3	122.6	122.9	123.1	123.4	123.7
80.6	80.5	80.4	80.3	80.2	80.1	80.0	79.9	79.8	79.7	79.6	79.5	79.4	79.3	79.2	79.1	79.0	79.0
107.5	119.5	119.8	120.0	120.3	120.6	120.8	121.1	121.4	121.6	121.9	122.2	122.4	122.7	123.0	123.2	123.5	123.8
80.3	80.2	80.1	80.0	79.9	79.8	79.7	79.6	79.5	79.4	79.3	79.2	79.1	79.0	78.9	78.7	78.6	78.6
108.0	119.6	119.8	120.1	120.4	120.6	120.9	121.2	121.4	121.7	122.0	122.3	122.5	122.8	123.1	123.3	123.6	123.9
80.1	79.9	79.8	79.7	79.6	79.5	79.4	79.3	79.2	79.1	79.0	78.9	78.7	78.6	78.5	78.4	78.3	78.3
108.5	119.7	119.9	120.2	120.5	120.7	121.0	121.3	121.6	121.8	122.1	122.4	122.6	122.9	123.2	123.4	123.7	124.0
79.8	79.6	79.5	79.4	79.3	79.2	79.1	79.0	78.9	78.7	78.6	78.5	78.4	78.3	78.2	78.1	77.9	77.9
109.0	119.8	120.0	120.3	120.6	120.8	121.1	121.4	121.7	121.9	122.2	122.5	122.7	123.0	123.3	123.5	123.8	124.1
79.5	79.3	79.2	79.1	79.0	78.9	78.7	78.6	78.5	78.4	78.3	78.2	78.1	77.9	77.7	77.6	77.6	77.6
109.5	119.9	120.1	120.4	120.7	121.0	121.2	121.5	121.8	122.0	122.3	122.6	122.8	123.1	123.4	123.7	124.2	124.2
79.1	79.0	78.9	78.8	78.7	78.6	78.5	78.4	78.3	78.2	78.1	78.0	77.8	77.7	77.6	77.5	77.3	77.2
110.0	120.0	120.2	120.5	120.8	121.1	121.3	121.6	121.9	122.1	122.4	122.7	123.0	123.2	123.5	123.8	124.1	124.3
78.8	78.7	78.6	78.5	78.4	78.2	78.1	78.0	77.9	77.7	77.6	77.5	77.4	77.2	77.1	77.0	76.9	76.9
110.5	120.1	120.4	120.6	120.9	121.2	121.4	121.7	122.0	122.3	122.5	122.8	123.1	123.4	123.6	123.9	124.2	124.5
78.5	78.4	78.3	78.2	78.1	77.9	77.8	77.7	77.5	77.4	77.3	77.2	77.1	77.0	76.9	76.8	76.7	76.5
111.0	120.2	120.5	120.7	121.0	121.3	121.5	121.8	122.1	122.4	122.7	122.9	123.2	123.5	123.8	124.0	124.3	124.6
78.2	78.1	78.0	77.8	77.7	77.6	77.5	77.3	77.2	77.1	77.0	76.9	76.8	76.7	76.6	76.5	76.4	76.1
111.5	120.3	120.6	120.9	121.1	121.4	121.7	122.0	122.2	122.5	122.8	123.1	123.3	123.6	123.9	124.2	124.4	124.7
77.9	77.8	77.7	77.5	77.4	77.3	77.1	77.0	76.9	76.7	76.6	76.4	76.3	76.2	76.1	75.9	75.8	75.8
112.0	120.4	120.7	121.0	121.2	121.5	121.8	122.1	122.4	122.6	122.9	123.2	123.5	123.7	124.0	124.3	124.6	124.9
77.6	77.5	77.3	77.2	77.1	76.9	76.8	76.6	76.5	76.4	76.2	76.1	76.0	75.8	75.7	75.5	75.4	75.4
112.5	120.5	120.8	121.1	121.4	121.6	121.9	122.1	122.4	122.8	123.0	123.3	123.6	123.9	124.2	124.4	124.7	125.0
77.3	77.1	77.0	76.9	76.7	76.6	76.4	76.3	76.2	76.0	75.9	75.7	75.5	75.4	75.3	75.1	75.0	75.0
113.0	120.7	120.9	121.2	121.5	121.8	122.1	122.3	122.6	122.9	123.2	123.5	123.7	124.0	124.3	124.6	124.9	125.1
77.0	76.8	76.7	76.5	76.4	76.2	76.1	76.0	75.8	75.7	75.5	75.4	75.2	75.1	74.9	74.8	74.6	74.6
113.5	120.8	121.1	121.4	121.6	121.9	122.2	122.5	122.8	123.0	123.3	123.6	123.9	124.2	124.4	124.7	125.0	125.3
76.6	76.5	76.3	76.2	76.1	75.9	75.8	75.6	75.5	75.3	75.2	75.0	74.9	74.7	74.5	74.4	74.2	74.2
114.0	120.9	121.2	121.5	121.8	122.1	122.3	122.6	122.9	123.2	123.5	123.7	124.0	124.3	124.6	124.9	125.2	125.5
76.3	76.2	76.0	75.9	75.7	75.6	75.4	75.3	75.1	75.0	74.8	74.6	74.4	74.3	74.1	73.9	73.8	73.5
114.5	121.1	121.3	121.6	121.9	122.2	122.5	122.8	123.0	123.3	123.6	123.9	124.2	124.5	124.8	125.0	125.3	125.6
76.0	75.8	75.7	75.5	75.4	75.2	75.1	74.9	74.7	74.5	74.4	74.2	74.1	73.9	73.7	73.6	73.4	73.1
115.0	121.2	121.5	121.8	122.1	122.4	122.6	122.9	123.2	123.5	123.8	124.1	124.4	124.6	124.9	125.2	125.5	125.8
75.6	75.5	75.3	75.2	75.0	74.9	74.7	74.5	74.4	74.2	74.1							

SCAN NADIR ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) FOR BETA=90.0DEG

## SPIN ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) AT THE HORIZON FOR BETA=90.0DEG

28.00	28.25	28.50	28.75	29.00	29.25	29.50	29.75	30.00	30.25	30.50	30.75	31.00	31.25	31.50	31.75	32.00	
120.0	122.8	123.1	123.4	123.7	124.0	124.3	124.7	125.0	125.3	125.6	125.9	126.2	126.5	126.8	127.1	127.4	127.7
72.1	71.9	71.7	71.5	71.3	71.1	70.9	70.7	70.5	70.3	70.1	69.9	69.7	69.5	69.3	69.1	68.9	68.7
120.5	123.0	123.3	123.6	123.9	124.2	124.5	124.9	125.2	125.5	125.8	126.1	126.4	126.7	127.0	127.3	127.6	128.0
71.7	71.5	71.3	71.1	70.9	70.7	70.5	70.3	70.1	69.9	69.7	69.5	69.3	69.1	68.8	68.6	68.4	68.2
121.0	123.2	123.5	123.8	124.1	124.4	124.8	125.1	125.4	125.7	126.0	126.3	126.6	126.9	127.2	127.6	127.9	128.2
71.4	71.2	71.0	70.8	70.5	70.3	70.1	69.9	69.7	69.5	69.3	69.1	68.8	68.6	68.4	68.2	68.0	67.8
121.5	123.7	124.0	124.3	124.7	125.0	125.3	125.6	125.9	126.2	126.5	126.8	127.2	127.5	127.8	128.1	128.4	128.7
71.0	70.8	70.6	70.4	70.1	69.9	69.7	69.5	69.3	69.1	68.8	68.6	68.4	68.2	67.9	67.7	67.5	67.3
122.0	123.6	123.9	124.2	124.6	124.9	125.2	125.5	125.8	126.1	126.4	126.8	127.1	127.4	127.7	128.0	128.4	128.7
70.6	70.4	70.2	70.0	69.7	69.5	69.3	69.1	68.9	68.6	68.4	68.2	67.9	67.7	67.5	67.3	67.0	66.8
122.5	123.8	124.1	124.5	124.8	125.1	125.4	125.7	126.0	126.4	126.7	127.0	127.3	127.6	128.0	128.3	128.6	128.9
70.2	70.0	69.8	69.5	69.3	69.1	68.9	68.6	68.4	68.2	68.0	67.7	67.5	67.3	67.0	66.8	66.5	66.3
123.0	124.0	124.6	124.7	125.0	125.3	125.6	125.9	126.2	126.6	126.9	127.2	127.6	127.9	128.2	128.5	128.9	129.2
69.8	69.6	69.4	69.1	68.9	68.7	68.4	68.2	68.0	67.7	67.5	67.3	67.0	66.8	66.5	66.3	66.1	65.8
123.5	124.3	124.6	124.9	125.2	125.5	125.9	126.2	126.5	126.8	127.2	127.5	127.8	128.1	128.5	128.8	129.1	129.5
69.4	69.2	68.9	68.7	68.5	68.2	68.0	67.8	67.5	67.3	67.1	66.8	66.6	66.3	66.1	65.8	65.6	65.4
124.0	124.5	124.8	125.1	125.5	125.8	126.1	126.4	126.7	127.1	127.4	127.7	128.1	128.4	128.7	129.1	129.4	129.7
69.0	68.8	68.5	68.3	68.0	67.8	67.6	67.3	67.1	66.8	66.6	66.3	66.1	65.8	65.6	65.3	65.1	64.9
124.5	124.7	125.1	125.4	125.7	126.0	126.4	126.7	127.0	127.4	127.7	128.0	128.3	128.7	129.0	129.3	129.7	130.0
68.6	68.3	68.1	67.8	67.6	67.4	67.1	66.9	66.6	66.4	66.1	65.9	65.6	65.4	65.1	64.8	64.6	64.4
125.0	125.0	125.3	125.6	126.0	126.3	126.6	127.0	127.3	127.6	128.0	128.3	128.6	129.0	129.3	129.6	130.0	130.3
68.1	67.9	67.7	67.4	67.2	66.9	66.7	66.4	66.2	65.9	65.6	65.4	65.1	64.9	64.6	64.3	64.1	63.9
125.5	125.2	125.5	125.9	126.2	126.5	126.9	127.2	127.6	127.9	128.2	128.6	128.9	129.2	129.5	130.3	130.6	131.1
67.7	67.5	67.2	67.0	66.7	66.5	66.2	65.9	65.7	65.4	65.2	64.9	64.6	64.4	64.1	63.8	63.5	63.2
126.0	125.5	125.8	126.1	126.5	126.8	127.2	127.5	127.8	128.2	128.5	128.9	129.2	129.5	129.9	130.2	130.6	130.9
67.3	67.0	66.8	66.5	66.3	66.0	65.7	65.5	65.2	64.9	64.7	64.4	64.1	63.8	63.3	63.0	62.7	62.4
126.5	125.7	126.1	126.4	126.8	127.1	127.4	127.8	128.1	128.5	128.8	129.2	129.5	129.8	130.2	130.5	130.9	131.2
66.8	66.6	66.3	66.0	65.8	65.5	65.3	65.0	64.7	64.4	64.2	63.9	63.6	63.3	63.0	62.7	62.5	62.2
127.0	126.0	126.3	126.7	127.0	127.4	127.7	128.1	128.4	128.8	129.1	129.5	129.8	130.2	130.5	130.9	131.2	131.6
66.4	66.1	65.8	65.6	65.3	65.0	64.8	64.5	64.2	63.9	63.6	63.4	63.1	62.8	62.5	62.2	61.9	61.6
127.5	126.3	126.6	127.0	127.3	127.7	128.0	128.4	128.7	129.1	129.4	129.8	130.1	130.5	130.8	131.2	131.6	131.9
65.9	65.7	65.4	65.1	64.8	64.5	64.3	64.0	63.7	63.4	63.1	62.8	62.5	62.2	62.0	61.7	61.3	61.0
128.0	126.6	126.9	127.3	127.6	128.0	128.3	128.7	129.0	129.4	129.7	130.1	130.5	130.8	131.2	131.5	131.9	132.3
65.5	65.2	64.9	64.6	64.3	64.1	63.8	63.5	63.2	62.9	62.6	62.3	62.0	61.7	61.4	61.1	60.8	60.5
128.5	126.9	127.2	127.6	127.9	128.3	128.6	129.0	129.3	129.7	130.1	130.4	130.8	131.2	131.5	131.9	132.3	132.6
65.0	64.7	64.4	64.1	63.8	63.5	63.3	63.0	62.7	62.4	62.1	61.8	61.4	61.1	60.8	60.5	60.2	60.0
129.0	127.2	127.5	127.9	128.2	128.6	129.0	129.3	129.7	130.0	130.4	130.8	131.1	131.5	131.9	132.2	132.6	133.0
64.5	64.2	63.9	63.6	63.3	63.0	62.7	62.4	62.1	61.8	61.5	61.2	60.9	60.6	60.2	59.9	59.6	59.3
129.5	127.5	127.8	128.2	128.6	129.0	129.3	129.7	130.0	130.4	130.8	131.1	131.5	131.9	132.2	132.6	133.0	133.4
64.0	63.7	63.4	63.1	62.8	62.6	62.3	62.0	61.9	61.6	61.3	61.0	60.6	60.3	60.0	59.7	59.3	59.0
130.0	127.8	128.2	128.5	128.9	129.3	129.6	130.0	130.4	130.7	131.1	131.5	131.9	132.2	132.6	133.0	133.4	133.8
63.5	63.2	62.9	62.6	62.3	62.0	61.7	61.3	61.0	60.7	60.4	60.1	59.7	59.4	59.1	58.7	58.4	58.1
130.5	128.1	128.5	128.9	129.2	129.6	130.0	130.4	130.7	131.1	131.5	131.9	132.3	132.6	133.0	133.4	133.8	134.2
63.0	62.7	62.4	62.1	61.7	61.4	61.1	60.8	60.5	60.1	59.8	59.5	59.1	58.8	58.4	58.1	57.7	57.4
131.0	128.5	128.8	129.2	129.6	130.0	130.3	130.7	131.1	131.5	131.9	132.3	132.6	133.0	133.4	133.8	134.2	134.6
62.5	62.2	61.8	61.5	61.2	60.9	60.5	60.2	59.9	59.5	59.2	58.9	58.5	58.2	57.8	57.5	57.1	56.8
131.5	128.8	129.2	129.6	130.0	130.3	130.7	131.1	131.5	131.9	132.3	132.7	133.1	133.4	133.8	134.2	134.6	135.0
61.9	61.6	61.3	61.0	60.6	60.3	60.0	59.6	59.3	58.9	58.6	58.2	57.9	57.5	57.2	56.8	56.4	56.1
132.0	129.6	129.9	130.3	130.7	131.1	131.5	131.9	132.3	132.7	133.1	133.5	133.9	134.3	134.7	135.1	135.5	136.0
60.8	60.5	60.2	59.8	59.5	59.1	58.8	58.4	58.1	57.7	57.3	57.0	56.6	56.2	55.8	55.5	55.1	54.7
132.5	129.4	129.9	130.3	130.7	131.1	131.5	131.9	132.3	132.7	133.1	133.5	133.9	134.3	134.7	135.1	135.5	136.0
60.3	59.9	59.6	59.2	58.9	58.5	58.2	57.8	57.4	57.1	56.7	56.3	55.9	55.5	55.1	54.8	54.4	54.0
133.0	130.3	130.7	131.1	131.5	131.9	132.3	132.8	133.2	133.6	134.0	134.4	134.8	135.2	135.7	136.1	136.5	136.9
59.7	59.3	59.0	58.6	58.3	57.9	57.5	57.2	56.8	56.4	56.0	55.6	55.2	54.8	54.4	54.0	53.6	53.3
133.5	130.7	131.1	131.5	131.9	132.3	132.8	133.2	133.6	134.0	134.4	134.8	135.2	135.7	136.1	136.5	136.9	137.3
59.2	58.8	58.4	58.0	57.6	57.3	56.9	56.5	56.1	55.7	55.3	54.9	54.5	54.1	53.7	53.3	52.9	52.5
134.0	130.7	131.1	131.6	132.0	132.4	132.8	133.2	133.6	134.0	134.4	134.8	135.2	135.7	136.1	136.5	136.9	137.4
59.1	58.7	58.4	58.0	57.6	57.3	56.9	56.5	56.1	55.7	55.3	54.9	54.5	54.1	53.7	53.3	52.9	52.5
134.5	131.2	131.6	132.0	132.4	132.8	133.2	133.6	134.0	134.4	134.8	135.2	135.7	136.1	136.5	136.9	137.3	138.0
58.5	58.1	57.8	57.4	57.0	56.6	56.2	55.8	55.4	55.0	54.6	54.2	53.8	53.4	53.0	52.6	52.2	51.8
135.0	131.6	132.0	132.4	132.9	133.3	133.7	134.1	134.6	135.0	135.4	135.9	136.3	136.8	137.2	137.6	138.0	138.5
57.9	57.5	57.1	56.7	56.3	55.9	55.5	55.1	54.7	54.3	53.9							

SCAN NADIR ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) FOR BETA=90.0DEG

SPIN ANGLE (UPPER) AND SCAN HORIZONTAL ANGLE (LOWER) AT THE HORIZON FOR BETA=90.0DEG

MESOMETEOROLOGY PROJECT ----- RESEARCH PAPERS

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19. Synoptic Interpretation of TIROS III Measurements of Infrared Radiation  
-Finn Pedersen and Tetsuya Fujita
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