

STAR'S HOUR ANGLE.		AZIMUTHS OF THE NORTH POLE STAR.										STAR'S HOUR ANGLE.	
Local Mean Time		POLAR DISTANCE 1° 11' 40".										Local Mean Time.	
		LAT. 38° N.	39	40	41	42	43	44	45	LAT. 46° N.			
H.	M.	S.									H.	M.	S.
0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23	56	4
	10		4.0	4.1	4.2	4.2	4.3	4.4	4.5	4.6			46
	20		8.1	8.2	8.3	8.4	8.6	8.7	8.9	9.2			36
	30		12.1	12.3	12.5	12.7	12.9	13.1	13.3	13.8			26
	40		16.1	16.3	16.6	16.8	17.1	17.4	17.7	18.4			16
0	50		20.1	20.3	20.7	21.0	21.3	21.7	22.1	22.9	23	0	
1	0		24.0	24.3	24.7	25.1	25.5	25.9	26.4	26.9	22	56	
	10		27.9	28.3	28.7	29.1	29.6	30.1	30.6	31.2			46
	20		31.7	32.1	32.6	33.1	33.7	34.2	34.8	35.5			36
	30		35.4	35.9	36.5	37.1	37.7	38.3	39.0	39.7			26
	40		39.1	39.7	40.3	40.9	41.6	42.3	43.0	43.8			16
1	50		42.7	43.3	44.0	44.7	45.4	46.2	47.0	47.8	22	0	
2	0		46.2	46.9	47.6	48.4	49.1	50.0	50.8	51.7	21	56	
	10		49.7	50.4	51.1	51.9	52.8	53.7	54.6	55.6	0	56.6	46
	20		53.0	53.8	54.6	55.4	56.3	57.2	58.2	59.3	1	0.4	36
	30		56.2	57.0	57.9	58.8	59.7	60.7	61.8	62.9			26
	40		59.3	60.2	61.1	62.0	63.0	64.1	65.2	66.1			16
2	50		62.3	63.2	64.2	65.2	66.2	67.3	68.5	69.7	11.0	21	6
3	0	0	65.2	66.1	67.1	68.2	69.3	70.4	71.6	72.9	14.2	20	56 1
	10	1	67.7	68.6	69.7	70.8	71.9	73.1	74.3	75.6	15.0	47	3 3
	20		70.3	71.3	72.4	73.5	74.7	75.9	77.2	78.6	20.0	37	
	30		72.8	73.8	74.9	76.1	77.3	78.6	79.9	81.3	22.8	27	
	40		75.1	76.2	77.3	78.5	79.8	81.1	82.5	83.9	25.5	17	
3	50		77.3	78.4	79.6	80.8	82.1	83.4	84.8	86.2	29.0	7	
4	0		79.3	80.5	81.7	82.9	84.2	85.6	87.0	88.4	19	57	
	10		81.2	82.4	83.6	84.9	86.2	87.6	89.0	90.4	32.4	47	
	20		82.9	84.1	85.4	86.7	88.0	89.4	90.8	92.2	34.3	37	
	30		84.5	85.7	87.0	88.3	89.6	91.0	92.4	93.8	36.1	27	
	40		85.9	87.2	88.5	89.8	91.1	92.5	93.9	95.2	37.6	17	
1	50		87.2	88.5	89.8	91.1	92.4	93.8	95.1	96.4	39.0	19	7
2	0		88.4	89.7	91.0	92.3	93.6	95.0	96.3	97.6	40.2	18	57
	10		89.5	90.8	92.1	93.4	94.7	96.0	97.3	98.6	41.2	47	
	20		90.5	91.8	93.1	94.4	95.7	97.0	98.3	99.6	42.0	37	
	30		91.4	92.7	94.0	95.3	96.6	97.9	99.2	100.4	42.6	27	
	40		92.2	93.5	94.8	96.1	97.4	98.7	100.0	101.1	43.0	17	
5	50	1	30.0	32.2	33.5	34.8	36.4	38.0	39.6	41.3	1	43.2	17 57 3
6	0		30.8	32.0	33.4	34.8	36.3	37.8	39.4	41.1			47
	10		30.5	31.7	33.0	34.4	35.9	37.4	39.1	40.8			37
	20		30.0	31.2	32.5	33.9	35.4	36.9	38.5	40.2			27
	30		29.3	30.5	31.8	33.2	34.6	36.2	37.8	39.4			17
	40		28.5	29.7	31.0	32.3	33.7	35.2	36.8	38.5			7
5	50		27.5	28.7	29.9	31.3	32.7	34.1	35.7	37.3	16	57	7
6	0		26.3	27.5	28.7	30.0	31.4	32.9	34.4	36.0			47
	10		25.0	26.1	27.4	28.6	30.0	31.4	32.9	34.5			37
	20		23.5	24.6	25.8	27.1	28.4	29.8	31.3	32.8			27
	30		21.8	22.9	24.1	25.4	26.7	28.0	29.5	31.0			17
	40		20.0	21.1	22.3	23.5	24.7	26.1	27.5	29.0	16	5	
7	0		18.1	19.1	20.2	21.4	22.7	24.0	25.3	26.8	15	55	
	10		16.0	17.0	18.1	19.2	20.4	21.7	23.0	24.5			45
	20		13.7	14.7	15.8	16.9	18.1	19.3	20.6	21.9			35
	30		11.3	12.3	13.3	14.4	15.5	16.7	18.0	19.3			25
	40		8.8	9.8	10.8	11.8	12.9	14.0	15.2	16.5			15
8	0		6.2	7.1	8.0	9.0	10.1	11.2	12.3	13.5	15	15	7 7
	10		3.7	4.6	5.5	6.4	7.5	8.5	9.6	10.8	12.0	14	58 2
	20		0.9	1.7	2.5	3.4	4.4	5.1	6.5	7.6			8
	30		57.9	58.7	59.5	60.3	61.3	62.2	63.2	64.3			38
	40		54.8	55.5	56.3	57.1	58.0	58.9	59.8	60.8			28
9	0		51.6	52.3	53.0	53.8	54.6	55.5	56.4	57.3			18
	10		48.3	49.0	49.7	50.4	51.1	51.9	52.8	53.7	14	8	
	20		45.0	45.6	46.2	46.9	47.6	48.3	49.1	49.9	13	58	
	30		41.5	42.1	42.7	43.3	43.9	44.6	45.3	46.1			48
	40		38.0	38.5	39.0	39.6	40.2	40.8	41.5	42.2			38
10	0		34.4	34.8	35.3	35.8	36.1	36.9	37.5	38.2			28
	10		30.7	31.1	31.6	32.0	32.5	33.0	33.5	34.1			18
	20		27.0	27.4	27.8	28.2	28.6	29.0	29.5	30.0	13	8	
	30		23.2	23.6	23.9	24.2	24.6	25.0	25.4	25.8	12	58	
	40		19.4	19.7	20.0	20.2	20.6	20.9	21.2	21.6			48
11	0		15.6	15.8	16.0	16.2	16.5	16.7	17.0	17.3			38
	10		11.7	11.9	12.0	12.2	12.4	12.6	12.8	13.0			28
	20		7.8	7.9	8.0	8.1	8.3	8.4	8.5	8.7			18
	30		3.9	4.0	4.0	4.1	4.1	4.2	4.3	4.4	12	8	
11	58	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11	58	2