

DIAGRAM TRUE NORTH ↑ OBSERVER	PROJECT		LOCATION			AZIMUTH BY HOUR ANGLE METHOD For use of this form, see FM 3-34.331; the proponent agency is TRADOC.									
	ORGANIZATION				LATITUDE (ϕ)		LONGITUDE (λ)			STATION					
	MARK				INSTRUMENT (Number and type)					STANDARD TIME (Meridian)					
	CELESTIAL BODY (S)				WATCH FAST (-) SLOW (+)					WATCH COMPARED (Time)					
	DATE (YYYYMMDD)			OBSERVER					WEATHER						

	SET NR 1						SET NR 2						SET NR 3					
	TIME			HOR. ANGLE			TIME			HOR. ANGLE			TIME			HOR. ANGLE		
	HRS.	MIN.	SEC.	o	'	"	HRS.	MIN.	SEC.	o	'	"	HRS.	MIN.	SEC.	o	'	"
Mean																		

SUN OBSERVATION For star observation, use factors enclosed in brackets								SET NR 1			SET NR 2			SET NR 3			
	1	Mean time of observation							HRS.	MIN.	SEC.	HRS.	MIN.	SEC.	HRS.	MIN.	SEC.
	2	Watch correction	$\pm$														
	3	Time Zone Correction (TZC)	$\pm$														
	4	UT of observation (1+2+3)															
	5	O^h Greenwich EQT [or Sid. T.]	$\pm$														
	6	UT X var. EQT per hour [Sid. T. correction]	$\pm$														
	7	(5+6) correct EQT [or G. Sid. T. (4+5+6)]	$\pm$														
	8	(4+7) GAT [or RA]															
	9	GHA in time (GAT-12h) [or (7-8)]															
	10	GHA in arc															
	11	Longitude, West (-), East (+)	$\pm$														
	12	LHA (10+11)=t (or $360^\circ - \text{LHA} = -t$)															

		SET NR 1			SET NR 2			SET NR 3					
t	$\pm$	o	'	"	o	'	"	o	'	"	Mean true azimuth to Mark		
Lat. (ϕ)	$\pm$										Grid correction $\pm$		
Dec. (δ)	$\pm$										Grid azimuth to Mark		
Sin t	$\pm$										Magnetic azimuth to Mark		
Cos t	$\pm$										Magnetic declination E(-), W(+)		
Sin ϕ	$\pm$										$-\tan A = \frac{\sin t}{\cos \phi \tan \delta - \sin \phi \cos t}$ If LHA is greater than 180°, subtract from 360° and reverse sign. Obtain δ from Ephemeris. Check signs and quadrants by use of sketch.		
Cos ϕ	$\pm$												
Tan δ	$\pm$												
-Tan A	$\pm$												
A (E or W)		o	'	"	o	'	"	o	'	"			
Azimuth of S													
_, Mark to S	-												
Tr. Az. to Mark													

COMPUTED BY				DATE (YYYYMMDD)				CHECKED BY				DATE (YYYYMMDD)			
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