(8)

In the spherical triangle Z P X the known sides are Z P, P X & X Z it is required to find the angle Z P X.

Let S = ½ the sum of the sides.

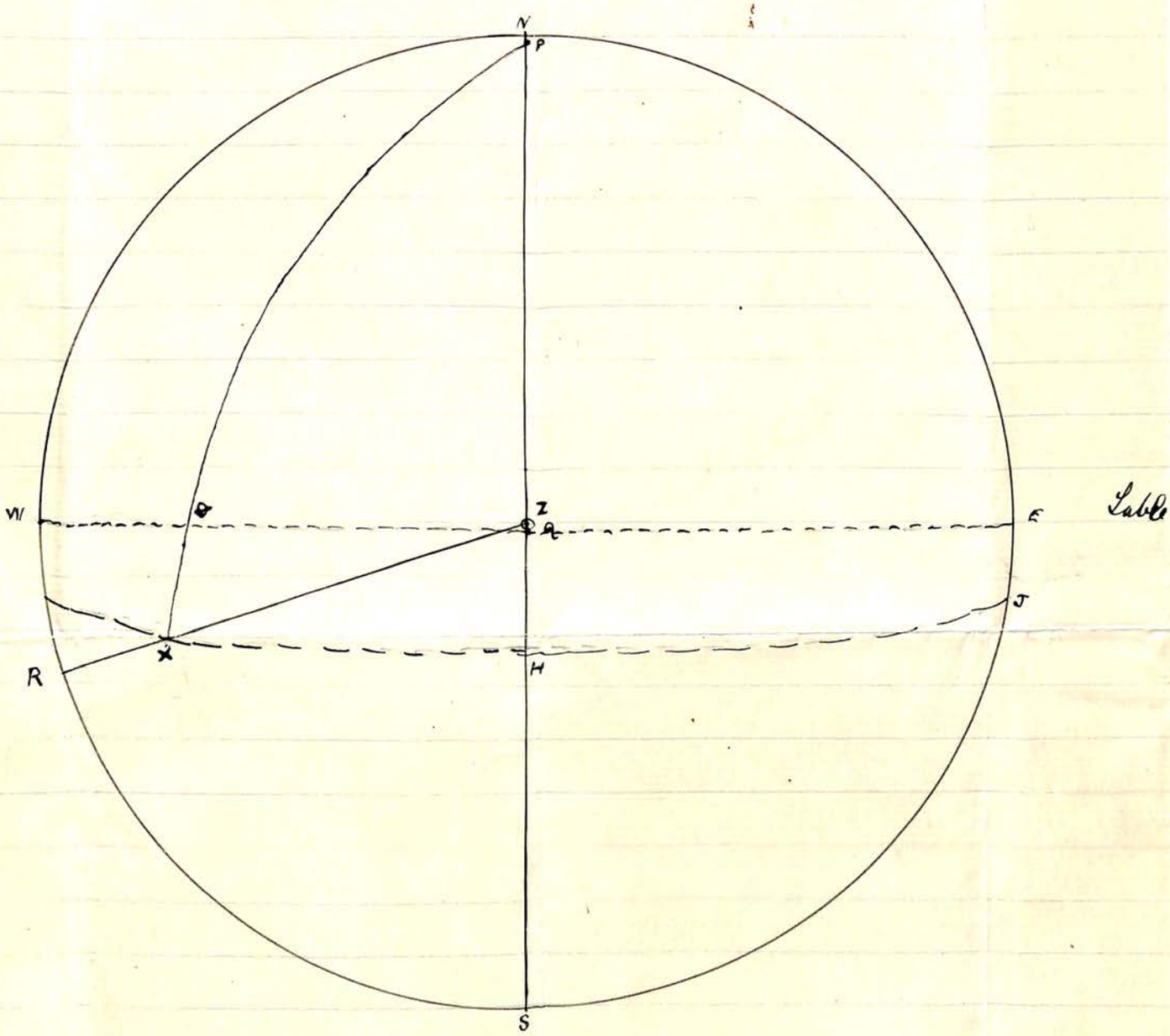
$$\cos \frac{Z\,P\,X}{2} = \sqrt{\text{Cosec } Z\,P \text{ cosec } P\,X \sin S \sin S - X\,Z}.$$

Z X =	70° - 51¾'.		
P Z =	88 · 38	Cosec	10 · 000124
X P =	111 41¼.	Cosec	10 · 031884
	271 - 11		
S =	135 - 35½	sin	9 · 844954
S - Z X =	64 - 43¾	sin	9 · 956313.
			19 · 833275
	hrs m secs.		
XXV $\frac{Z\,P\,X}{2}$	2 · 17 · 30·3	Cos	9 · 916637
	2		
Z P X.	4 - 35 - 0 · 6	Appar: Time at Ship	
Eqn S.	8 21·3		
	4. 43 21 9	M. T. S.	
	14 11 36 5	M. T. G.	
	11 - 31 - 45·4	Long in Time.	
	5.		
	57 - 38 - 47		
	3		
	172° 56' 21"	Longitude	

Sunday. Jan 13th Obs Alt Sun's LL. 19° 0' Correct Gbs T 12. 1. 24 hrs 14. min 11. sec 36.5
Lat 1° 22' N Correct Decl: 21° 41¼' S C.T. 8. min 21. sec 3 + Height of eye 28 ft.

Obs Alt 19° 0' Decl 21° 41¼ S. Lat. 1. 22 True Alt 19. 8¼

Lab: IX Corr:	8¼.	90. 0	90. 0.	90. 0
True Alt.	19. 8¼.	P.D. 111. 41¼.	Co. Lat. 88. 38	Co Alt 70 - 51¾



Let W E S W represent a projection of the celestial concave on a plane of the horizon. N Z H S the ship's meridian. Z the zenith. P the elevated pole. X R the altitude. X Z the zenith dist or co alt. W Q E the equinoctial (an imaginary circle in the heavens corresponding to the terrestial equator). X Q the declination P X the polar distance. Z P X the hour angle. X H J a circle of declination. Z Q the latitude P Z X = the azimuth.