

$88^{\circ} 52' 11''$ the time by chronometer 2d. 4h. 27m. 0s. the eye 24 feet, instruments adjusted. Required the error of the chronometer on G. m. t. and the longitude by lunars.

Answer—Chron. fast 1m. 41s on G. m. t.
Long. $119^{\circ} 49' W$

141. Nov. 11, 1858, at 5h. 38m. 50s. p.m., ap. time, by watch at ship, in lat. $10^{\circ} 15' S$. the observed alt. moon's l.l. $68^{\circ} 7'$ the observed alt. of Venus's centre (west of meridian) $44^{\circ} 42'$ the observed distance between the centre of Venus and the moon's nearest limb $24^{\circ} 19' 24''$ —the eye 24 feet. The instruments adjusted—the time by chronometer 10d. 21h. 17m. 40s. Required the error of the watch on ap. time at ship—the error of the chronometer on G. m. t. and the longitude.

Answer—Watch slow 25s. on ap. time.
Chron. fast 1m. 0s. on G. m. t.
Longitude $121^{\circ} 41' 15'' E$.

142. March 21, 1858, suppose a ship bound for St. John's, N. F., in lat. $47^{\circ} 31' N$. and longitude by account $51^{\circ} 30' W$. took a set of altitudes and distances of the moon and Jupiter, with the corresponding times by watch, the means of which were—alt. moon's up. l. $58^{\circ} 44'$, Jupiter's centre $21^{\circ} 42'$ (west of meridian) distance between Jupiter's centre and moon's farther limb $41^{\circ} 16' 25''$. Time by watch 7h. 48m ap. time, p.m. No index error—eye 16 feet. Required the error of the watch on ap. time and the true longitude by lunars.

Answer—Watch slow 36s.
True longitude $50^{\circ} 42' 30'' W$.

143. April 28, 1858, in lat. $46^{\circ} 40' S$. and by account in longitude $88^{\circ} 45' W$. at 10h. 40m. p.m., ap. time by watch at ship, the observed altitude of the moon's l.l. was $55^{\circ} 21'$, the observed alt. of Antares, (a Scorpii) $46^{\circ} 24' 30''$, east of meridian. The observed distance of moon's nearest limb $16^{\circ} 46' 30''$. Instruments adjusted—eye 15 feet. Required the error of the watch