

Date: 12 May 2005		Estimated UT: 21:18:16
$H_A = 38^\circ 23.9' LL$	$h_A = 30^\circ 21.3' LL$	$LD = 51^\circ 52.3'$
$SD_{SUN} = 15.9'$	$SD_{MOON} = SD_{TAB} + 0.26' \sin(h_A)$	
	$SD_{MOON} = 14.9' + 0.26' \sin(30^\circ 21.3') = 15.03'$	
$LD_{SD} = 51^\circ 52.3' + 15.9' + 15.0' = 52^\circ 23.2' = 52.3866667$	$STO[3]$	
Sun SD alt correction: $H_A = 38^\circ 23.9'$ LL SD <u>15.9'</u> $H_{SD} = 38^\circ 39.8'$	$h_A = 30^\circ 21.3'$ LL SD <u>15.0'</u> $h_{SD} = 30^\circ 36.3'$	$STO[1]$ $STO[2]$
$STO[3] = \cos RBA = (\sin [1] \sin [2] + \cos [1] \cos [2] \cos [3]) / (\sin [1] \cos [2] \sin [3])$		
Full sun alt correction: $H_A = 38^\circ 23.9'$ alt <u>+14.8'</u> $H_O = 38^\circ 38.7'$	Full moon alt correction: $h_A = 30^\circ 21.3'$ main <u>58.8'</u> LL <u>1.3'</u> $h_O = 31^\circ 21.4'$	$STO[1]$ $STO[2]$
$\cos LD_O = \sin [1] \sin [2] + \cos [1] \cos [2] \cos [3]; LD_O = 52^\circ 2.9'$		
Compute LD for 2100 UT: Sun GHA <u>135° 55.2'</u> Moon GHA <u>79° 59.0'</u> Diff GHA <u>55° 56.2'</u>	dec <u>N18° 19.5'</u> dec <u>N27° 49.7'</u>	$STO[1]$ $STO[2]$
$STO[3]$		
$\cos LD_1 = \sin [1] \sin [2] + \cos [1] \cos [2] \cos [3]; LD_1 = 51^\circ 54.2'$		
Compute LD for 2200 UT: Sun GHA <u>150° 55.2'</u> Moon GHA <u>94° 27.8'</u> Diff GHA <u>56° 27.4'</u>	dec <u>N18° 20.1'</u> dec <u>N27° 46.7'</u>	$STO[1]$ $STO[2]$
$STO[3]$		
$\cos LD_2 = \sin [1] \sin [2] + \cos [1] \cos [2] \cos [3]; LD_2 = 52^\circ 21.7'$		
Interpolate for UT: $\Delta T = 60 (LD_O - LD_1) / (LD_2 - LD_1) = 60 (8.7' / 27.5')$ $\Delta T = 18.982 \text{ min} = 18:59$	$UT = 21:18:59$	