

Date: 12 May 2005		Estimated UT: 21:18:16	
$H_A = 38^\circ 23.9' LL$	$h_A = 30^\circ 21.3' LL$	$LD = 51^\circ 52.3'$	
$SD_{SUN} = 15.9'$	$SD_{MOON} = SD_{TAB} + 0.26' \sin(h_A)$		
	$SD_{MOON} = 14.9' + 0.26' \sin(30^\circ 21.3') = 15.03'$		
$LD_{SD} = 51^\circ 52.3' + 15.9' + 15.0' = 52^\circ 23.2' = 52.38666667$ STO[3]			
Sun SD alt correction:		Moon SD alt correction:	
$H_A 38^\circ 23.9'$		$h_A 30^\circ 21.3'$	
LL SD <u>15.9'</u>		LL SD <u>15.0'</u>	
$H_{SD} 38^\circ 39.8'$	STO[1]	$h_{SD} 30^\circ 36.3'$	STO[2]
$STO[3] = \cos RBA = ([3] - \sin [1] \sin [2]) / (\cos [1] \cos [2])$			
Full sun alt correction:		Full moon alt correction:	
$H_A 38^\circ 23.9'$		$h_A 30^\circ 21.3'$	
alt <u>+14.8'</u>		main <u>58.8'</u>	
$H_O 38^\circ 38.7'$	STO[1]	LL <u>1.3'</u>	
		$h_o 31^\circ 21.4'$	STO[2]
$\cos LD_O = \sin [1] \sin [2] + \cos [1] \cos [2] \times [3] ; LD_O = 52^\circ 2.9'$			
Compute LD for 2100 UT:			
Sun GHA <u>135° 55.2'</u>		dec <u>N18° 19.5'</u>	STO[1]
Moon GHA <u>79° 59.0'</u>		dec <u>N27° 49.7'</u>	STO[2]
Diff GHA <u>55° 56.2'</u>	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>		dec <u>N18° 20.1'</u>	STO[1]
Moon GHA <u>94° 27.8'</u>		dec <u>N27° 46.7'</u>	STO[2]
Diff GHA <u>56° 27.4'</u>	STO[3]		
$\cos LD_2 = \sin [1] \sin [2] + \cos [1] \cos [2] \cos [3] ; LD_2 = 52^\circ 21.7'$			
Interpolate for UT:			
$\Delta T = 60 (LD_O - LD_1) / (LD_2 - LD_1) = 60 (8.7' / 27.5')$			
$\Delta T = 18.982min = 18:59$ UT = 21:18:59			