Answer on Question #54954, Physics / Astronomy | Astrophysics

By equation :

$$GHA_{\odot} = GHAMS + 12^{h} - \text{Ephemeris transit.}$$

Hence,

$$GHA_{\odot} = GHAMS + 2^{m}19^{s} \text{ (A)}$$

We proceed by setting up the following scheme:

	h	m	s	Date
Approximate ZT	16	30	0	June 1st
Zone	+7			
Approximate GD	23	30	0	June 1st
Chronometer time	23	31	20	
Error (slow)		+1	10	
Correct GD	23	32	30	June 1st
Hence, GHAMS is	11	32	30	
		+2	+19	
$GHA_{\odot}$	11	34	49	using (A)
Longitude (W)	-6	54	40	
$HA_{\odot}$	4	40	9	

In the second last line, the longitude has been converted, thus:

$103^{\circ}40' = 6 \times 15^{\circ} + 13^{\circ} + 40' = 6^{h} + 52^{m} + 160^{s} = 6^{h}54^{m}40^{s}$.

Answer: $6^{h}54^{m}40^{s}$