Note on Interpolation...

... also known as "Robert's Tabular Interpolation Method." See Problem 2-5, for example.

(1) write down what you know
000 => 20
045 => 6.5
(ie the deviation at 000 C is 20.0° E, at 045 C it is 6.5 E --- or any thing, ie at azimuth 000, the height of the star was 50° and at 045 it was 6.5°, or at 00h 00m the temp was 20° and at 00h 45m the temp was 6.5° -- this is general interpolation of any data)

(2) write down what you want
030 => ? (what is the value at 030, given that i know it at 000 and 045)

(3) decide how many steps it takes to make a table with your value in it
000 => 20
015 =>
030 =>
045 => 6.5
want the answer at 30, so we can do this in 3 steps

(4) figure the increment per step: (20 - 6.5) / 3 = 13.5/3 = 4.5

(5) now fill in the table either subtracting from the top or adding from the bottom, ie
045 => 6.5
030 => 6.5+ 4.5 = 11, then
015 => 11+ 4.5 = 15.5, then we check to see that the top is right
000 =>15.5 + 4.5 = 20.0 ie we got it right.

000 => 20.0
015 => 15.5
030 => 11.0
045 => 6.5

(6) to use this method for finer steps, say you want 005, then do it first for 15, as above, then interpolate the same way between 015 and 000, ie
000 => 20.0
005 =>
010 =>
015 => 15.5
steps = 3, increment = (20 -15.5) / 3 = 1.5
so
000 => 20.0
005 => 20.0 - 1.5 = 18.5
010 => 18.5 - 1.5 = 17.0
015 => 17.0 - 1.5 = 15.5

so the value for 005 is 18.5.