

Date: 4/9/21

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Location: Playa del Rey, CA

bucket D1: 17cm

bucket D2: 13cm

D: 2 (17-13=4/2=2)

H: 90cm

smallest z1: 25.79°

smallest z2:

$A = z_2 - z_1$

$R = 180 * D / (A * \pi)$

Time	S	X1	L=S+X1-D	$\tan(z)=L/H$	$z = \text{ATAN}(L/H)$
12:30	41.5cm	9cm	48.5cm	.5389	28.32
12:35	41cm	9cm	48cm	.5333	28.07
12:40	40.5cm	9cm	47.5cm	.5278	27.83
12:45	40cm	9cm	47cm	.5222	27.57
12:50	39cm	9cm	46cm	.5111	27.07
12:55	39cm	9cm	46cm	.5111	27.07
1:00	37.5cm	8cm	43.5cm	.4833	25.79
1:05	37.5cm	8cm	43.5cm	.4833	25.79
1:10	39cm	7cm	44cm	.4889	26.05
1:15	39.5cm	7cm	44.5cm	.4944	26.31

This table also works well in a spread sheet.

Analysis

- 1) Fill in the data table with your measured zenith angles, z.
- 2) This is your P1 contribution to the class's data set. Send your data table as an email attachment to the instructor. Include the names of everyone who assisted in the measurement. He/she will post your results on the ASTR360 Lecture Notes page.
- 3) If a group travels far enough away from CSULA on the shadow measurement day their data can be used as the P2 site. The distant site must be at least 100 miles away on a true north south line. This is the distance on a fixed longitude between latitudes. Going even 1000 miles east-west at the same latitude is not useable.
- 4) The instructor will supply the zenith angles at Sacramento as a P2 site. No site in Southern California is a valid P2 site. The true N-S distance from the Southern California sites will be