Answer keys to selected questions of Lab #9

Q4

telescopes in space are not subject to atmosphere interference.

Q6

1. Check the "Non-member ids for Each Parallax Target List" table in the last page

Q9

In addition to the stars ruled out from question 6, we can rule out the following ones based on your target list:

A	B	C	D	E
14	29	17	None	34

Q11

Should be very close.

Q12

Should get ~ 47 pc.

Q13

Check the tables below

Note: m and Old Class taken from Stellar Spectroscopy lab key. Students should be very close; half the data had already been given to them, remember. However, there may be variances.

A ID	Star Name	Par. angle	d (pc)	m-M	m	M	New class	Old Class
4	**rho Tau**	**22.67**	**44.1**	**3.3**	**4.7**	**1.4**	**A3**	**A8**
7	62 Tau	**4.46**	**224**	**6.8**	**6.4**	**-0.4**	**B7**	**B3**
10	71 Tau	**22.41**	**44.6**	**3.3**	**4.5**	**1.2**	**A2**	**A8**
13	90 Tau	**22.64**	**44.2**	**3.3**	**4.3**	**1.0**	**A1**	**A3**
14	91 Tau	**17.40**	**57.5**	**3.8**	**5.1**	**1.3**	**A2**	**A5**
23	HD 27534	**20.64**	**48.4**	**3.4**	**6.8**	**3.4**	**F3**	**F5**
31	HD 28607	**8.54**	**117**	**5.3**	**8.3**	**3.0**	**F1**	**F5**
40	HD 286929	**22.90**	**43.7**	**3.2**	**10.1**	**6.9**	**K6**	**K5**
45	HG 7-141	**20.96**	**47.7**	**3.4**	**13.5**	**10.1**	**M4**	**A9**
50	LP 475-445	**20.88**	**47.9**	**3.4**	**12.6**	**9.2**	**M3**	**M0**

B ID	Star Name	Par. Angle	d (pc)	m-M	m	M	New Class	Old Class
3	**psi Tau**	**36.22**	**27.6**	**2.1**	**5.2**	**3.1**	**F1**	**F0**
5	sig02 Tau	**20.17**	**49.6**	**3.5**	**4.7**	**1.2**	**A2**	**A5**
11	85 Tau	**21.29**	**47.0**	**3.4**	**6.0**	**2.6**	**A9**	**F0**
12	89 Tau	**20.55**	**48.7**	**3.4**	**5.8**	**2.4**	**A8**	**F0**
19	HD 26784	**22.29**	**44.9**	**3.3**	**7.1**	**3.8**	**F5**	**G2**
27	HD 27859	**21.67**	**46.1**	**3.4**	**7.8**	**4.4**	**G1.5**	**G4**
28	HD 28150	**7.99**	**125**	**5.5**	**7.0**	**1.5**	**A3**	**B6**
29	HD 28394	**15.40**	**64.9**	**4.1**	**7.0**	**2.9**	**F0**	**F6**
49	HIP 20605	**6.96**	**144**	**5.8**	**11.7**	**5.9**	**K2**	**M0**
51	LP 415-1458	**21.31**	**46.9**	**3.4**	**11.4**	**8.0**	**K8.5**	**A5**

C ID	Star Name	Par.Ang.	D (pc)	m-M	m	M	New	Old
5	**sig02 Tau**	**20.17**	**49.6**	**3.5**	**4.7**	**1.2**	**A2**	**A5**
8	63 Tau	**20.43**	**48.9**	**3.4**	**5.6**	**2.2**	**A7**	**A8**
15	V805 Tau	**20.10**	**49.8**	**3.5**	**13.2**	**9.7**	**M4**	**M1**
17	BD+19 641	**14.27**	**70.1**	**4.2**	**8.7**	**4.5**	**G3**	**G4**
20	HD 27130	**21.40**	**46.7**	**3.4**	**8.3**	**4.9**	**G6**	**G6**
25	HD 27797	**4.82**	**207**	**6.6**	**9.1**	**2.5**	**A8**	**K5**
26	HD 27848	**19.59**	**51.0**	**3.6**	**7.0**	**3.4**	**F3**	**F6**
34	HD 29528	**17.24**	**58.0**	**3.8**	**8.9**	**5.1**	**G7**	**K0**
39	HD 286885	**4.03**	**248**	**6.9**	**10.4**	**3.5**	**F3**	**B7**
46	HG 7-154	**21.00**	**47.6**	**3.4**	**15.6**	**12.2**	**M8**	**M1**

D ID	Star Name	Par.Ang.	D(pc)	m-M	m	M	New	Old
1	**del02 Tau**	**21.67**	**46.1**	**3.3**	**4.8**	**1.5**	**A3**	**A8**
16	V895 Tau	**19.54**	**51.2**	**3.6**	**7.6**	**4.0**	**F8**	**G3**
18	HD 25825	**21.03**	**47.8**	**3.4**	**7.9**	**4.5**	**G3**	**G0**
19	HD 26784	**22.29**	**44.9**	**3.3**	**7.1**	**3.8**	**F5**	**G2**
23	HD 27534	**20.64**	**48.4**	**3.4**	**6.8**	**3.4**	**F3**	**F5**
26	HD 27848	**19.59**	**51.0**	**3.6**	**7.0**	**3.4**	**F3**	**F6**
35	HD 29837	**1.89**	**529**	**7.5**	**8.3**	**0.8**	**A0**	**A5**
37	HD 285720	**21.40**	**46.7**	**3.4**	**10.0**	**6.6**	**K5**	**K6**
42	HG 7-38	**5.06**	**198**	**6.5**	**11.6**	**5.1**	**G7**	**M1**
47	HG 7-232	**21.33**	**46.9**	**3.4**	**11.7**	**8.3**	**M0**	**G0**

E ID	Star Name	Par.Ang.	d(pc)	m-M	m	M	New	Old
2	**nu Tau**	**28.47**	**35.1**	**3.3**	**3.9**	**1.1**	**A1.5**	**A1**
5	sig02 Tau	**20.17**	**49.6**	**3.5**	**4.7**	**1.2**	**A2**	**A5**
6	ups Tau	**21.21**	**47.1**	**3.4**	**4.3**	**0.9**	**A1**	**A7**
9	70 Tau	**18.95**	**52.8**	**3.6**	**6.5**	**2.9**	**F0**	**F7**
20	HD 27130	**21.40**	**46.7**	**3.4**	**8.3**	**4.9**	**G6**	**G6**
22	HD 27350	**1.44**	**694**	**7.5**	**8.4**	**0.9**	**A1**	**A2**
31	HD 28607	**8.54**	**117**	**5.3**	**8.3**	**3.0**	**F1**	**F5**
34	HD 29528	**17.24**	**58.0**	**3.8**	**8.9**	**5.1**	**G7**	**K0**
36	HD 285507	**22.18**	**45.1**	**3.3**	**10.5**	**7.2**	**K7**	**K0**
37	HD 285720	**21.40**	**46.7**	**3.4**	**10.0**	**6.6**	**K5**	**K6**

Average d (pc) for Each Parallax Target List (assuming 2 or 3 non-members)

Target List		A	B	C	D	E
Avg d	**w/ 2**	47.3	47.0	52.7	47.9	47.6
	w/ 3	45.8	44.4	50.2		46.2

Non-member ids for Each Parallax Target List

Target List	A	B	C	D	E
definites	7, 31	28,49	25,39	35, 42	22, 31
possibles (3)	14?	29	17		34?
possibles (4)			34?		

? = as before, not a good case to be made, but students may be cautious.

Table 13, 14 given below in case you need to check student data.