




**So You Were Chosen for
NITARP**

Questions we had:

- 1) What kinds of research can a person like me do?
 - 2) What will our year together look like?
 - 3) What about the students?
 - 4) What about our trips?
 - 5) What about our workload?
 - 6) What are some benefits of NITARP? (Why am I doing this??)
 - 7) Umm, advice???
- 

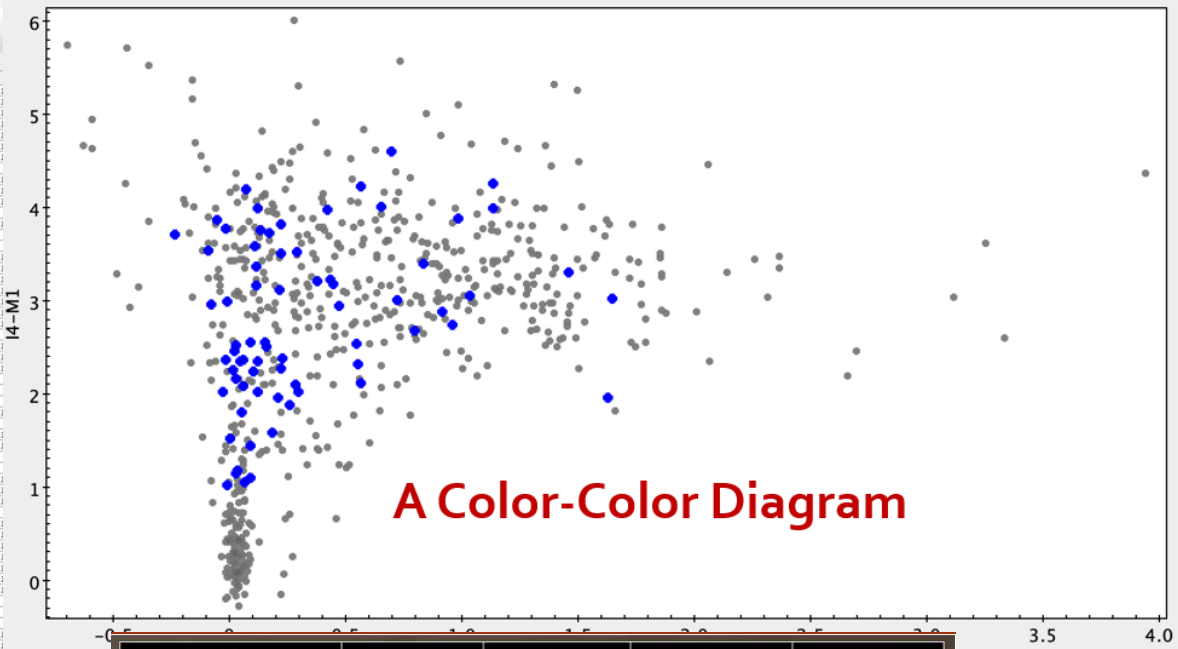
1. What Kinds of Research Can a Person Like Me Do?

- Jeff's Project (fIRes w/Varoujan, 2022) – Finding evidence of rocky planets around red dwarf stars using the technique of infrared excess
- Ben's Project (Young Stellar Objects 'YSOs', with Luisa during Covid) - Two years of virtual work, posters and AAS meetings... Evidence for young stellar objects in the Nebular Stream of the Spider Nebula (IC417).

Table Browser for f: files SEP Data 2

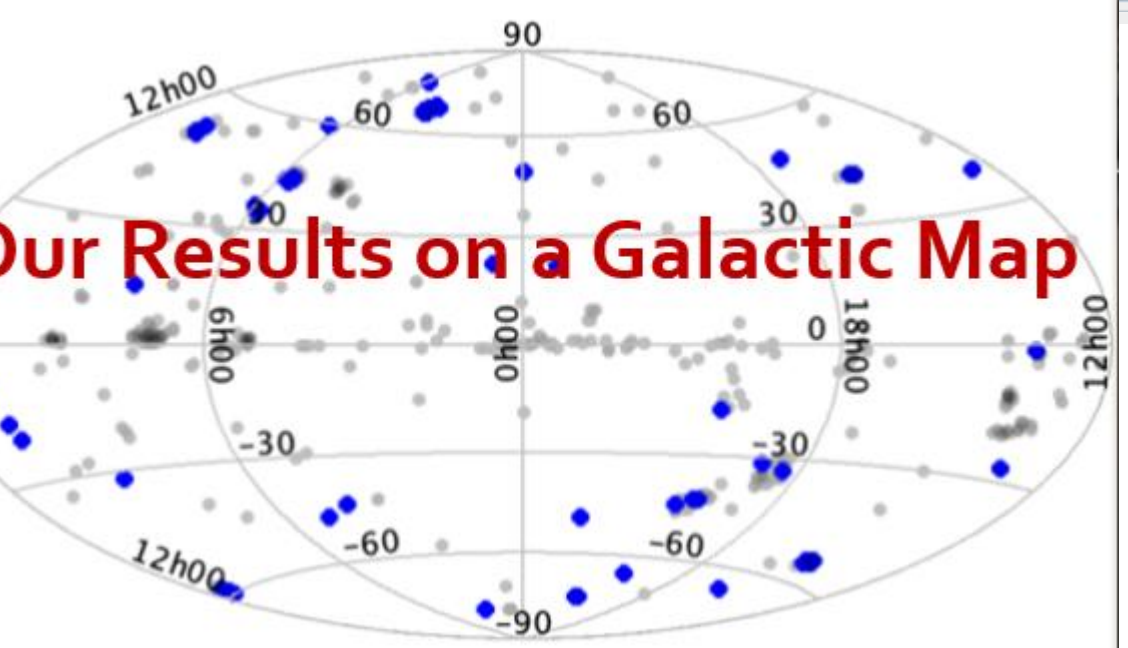
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13	0	0	163.71725	-41.54924	259.6454	-2.7414	1	0	7	1	1	1	1	1	2	2	2	2	0	12200.	10.90544
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29	0	0	265.72124	-29.93721	359.69855	0.5090	1	0	7	1	1	1	1	1	2	2	2	2	0	3514.	12.25687
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36	0	0	149.29216	48.29479	142.0173	41.46509	1	0	6	1	1	1	1	1	2	2	2	2	0	1767.	15.03329
37	0	0	35.35516	-37.75993	149.45005	-58.20473	1	0	7	1	1	1	1	1	2	2	2	2	0	2253.	12.73948
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39	0	0	265.48709	-30.44001	356.12281	-0.20053	1	0	7	1	1	1	1	1	2	2	2	2	0	1279.	13.35842
40	0	0	219.06393	38.49084	59.88741	66.20148	1	0	7	1	1	1	1	1	2	2	2	2	0	1449.	13.21871
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44	0	0	164.00793	56.03818	148.09848	53.00212	1	0	6	1	1	1	1	1	2	2	2	2	0	1322.	13.3193
45	0	0	163.48987	57.38559	149.20512	53.33269	1	0	7	1	1	1	1	1	2	2	2	2	0	5130.	11.14544
46	0	0	235.46136	-7.44487	359.18493	16.71522	1	0	7	1	1	1	1	1	2	2	2	2	0	1.058000E5	5.56017
47	0	0	262.64497	-26.20231	-3.27895	-0.35159	1	0	7	1	1	1	1	1	2	2	2	2	0	1.105000E5	6.51297
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51	0	0	83.95094	-41.6057	205.53499	-17.52201	1	0	7	1	1	1	1	1	2	2	2	2	0	1452.	13.07433
52	0	0	160.03183	3.64624	234.37154	43.33943	1	0	7	1	1	1	1	1	2	2	2	2	0		
53	0	0					1	0	7	1	1	1	1	1	2	2	2	2	0		

First Cut of Our Data



A Color-Color Diagram

Our Results on a Galactic Map

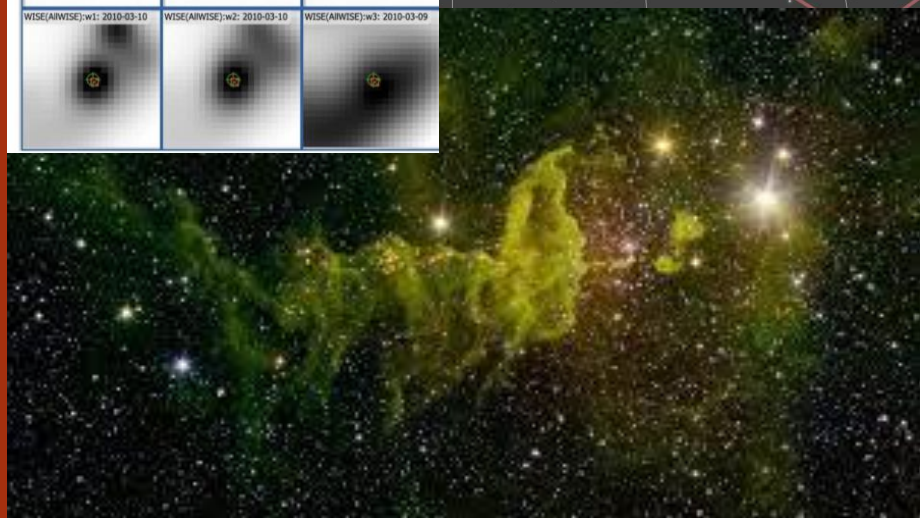
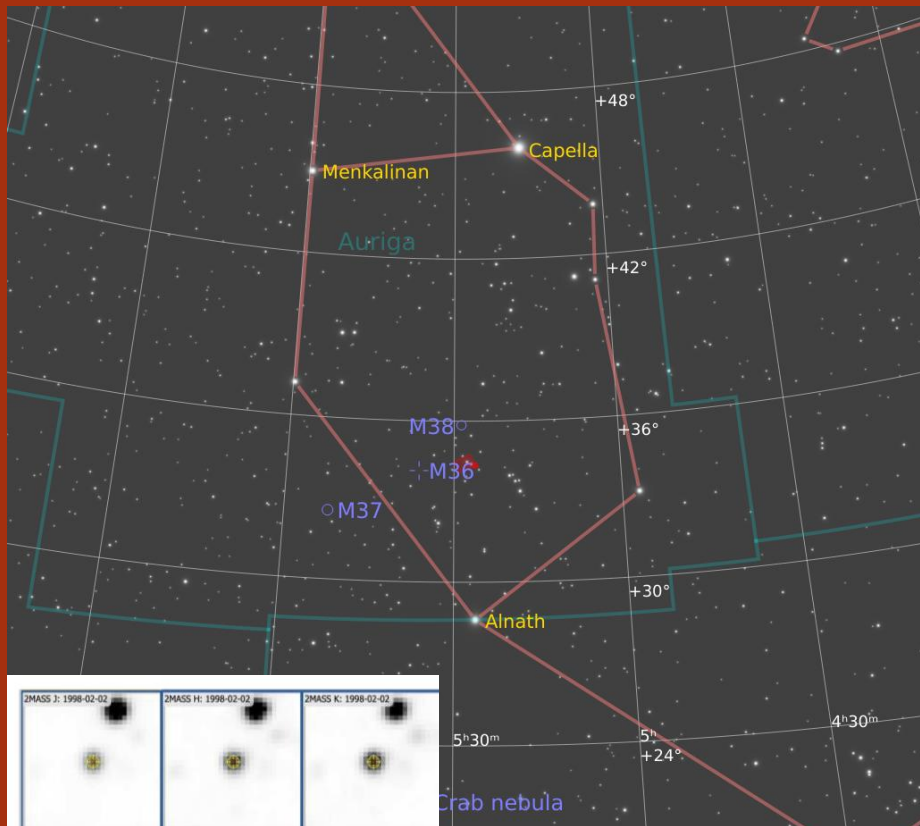


SED Graphs

Example	II	I2	I4	M1	
Example 1					
Example 2					
Example 3					
Example 4					

Example of a Rejected Target-M4 channel is off center

IMAGES!!



FO1		A	B	C	D	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO
1		Identification, where and why and lit				WISE IRx	Final Rank	Final Rank Order	slope 2-24 um	SED class	IR x any band	AV, JHK (est)	Chi (I-I2)	Chi(-Ha)	large IRX flag	JHKX flag	HAX flag	Blux flag	num points SED	UMAG	BMAG	VMAG	ICMAG	PANGMAG	PANGMERR	PANRMAG	PANR9
2	052638.58+343832.1	Winston+20 YSO, WISE IR excess				1	5	633	-0.92	II	1	0.1	6.4	14.3	1	1	1	30						20.40	0.069	18.90	
3	052638.58+343832.1	Winston+20 YSO, WISE IR excess				1	5	633	-0.92	II	1																
4	052639.17+344837.8	Winston+20 YSO				1d	65	65	-1.39	II	1																
5	052642.58+343350.3	Winston+20 YSO				5	647	647	0.42	I	1																
6	052643.59+344750.7	Pandey+20 YSO, Winston+20 YSO, WISE IR excess				1	5	642	0.15	flat	1																
7	052652.34+344714.6	Pandey+20 YSO, Winston+20 YSO, WISE IR excess				1	5	651	-1.11	II	1																
8	052657.35+342436.0	Pandey+20 YSO, Winston+20 YSO, WISE IR excess				1	5	679	-0.88	II	1																
9	052658.07+344418.5	Winston+20 YSO				3	234	234	-0.9	II	1																
10	052700.29+345055.0	ASAS-SN variable				1r	8	8	-2.3	III	1																
11	052701.03+342839.5	Winston+20 YSO				4	497	497	-2.01	III	1																
12	052704.46+342559.0	Witham+08 Ha bright, Winston+20 YSO				5	680	680	-0.67	II	1																
13	052705.08+341330.6	ASAS-SN variable				3	275	275	-1.32	II	1																
14	052705.44+344951.4	Winston+20 YSO				5	552	552	-1.49	II	1																
15	052705.66+341931.6	OB star				5	524	524	-2.54	III	1																
16	052705.83+343312.0	Winston+20 YSO, WISE IR excess				1	5	695	-0.6	II	1																
17	052707.42+341822.7	Witham+08 Ha bright, Pandey+20 YSO, Winston+20 YSO, WISE IR excess				1	4*	489	0.31	I	1																
18	052707.44+340858.6	ASAS-SN variable, Carbon star				1r	5	5	-2.08	III	1																
19	052708.72+342751.9	Lata+19 variable				3r	358	358	-2.46	III	1																
20	052708.88+345031.5	Pandey+20 YSO, Winston+20 YSO, WISE IR excess				1	5	689	-1.08	II	1																
21	052709.28+34513.1	Winston+20 YSO				4	460	460	-1.24	II	1																
22	052709.84+342859.1	Lata+19 variable				3	332	332	-2.65	III	1																
23	052710.62+343017.4	Lata+19 variable				3	298	298	-2.66	III	1																
24	052712.08+342020.3	Winston+20 YSO				4	450	450	-1.93	III	1																
25	052712.34+342119.9	Witham+08 Ha bright				4	508	508	-2.63	III	1																
26	052714.18+343499.8	Lata+19 variable				3	261	261	-2.82	III	1																
27	052714.38+342931.3	Lata+19 variable				3	355	355	-2.65	III	1																
28	052714.67+343004.3	Winston+20 YSO				4	465	465	-1.1	II	1																
29	052715.24+344415.4	Winston+20 YSO				4	512	512	-0.97	II	1																
30	052715.70+342943.3	Lata+19 variable				3	330	330	-2.59	III	1																
31	052715.93+342543.4	OB star				5	540	540	-2.9	III	1																
32	052716.78+343056.7	OB star				5	534	534	-2.46	III	1																
33	052716.92+344446.4	Winston+20 YSO				4	452	452	-1.33	II	1																

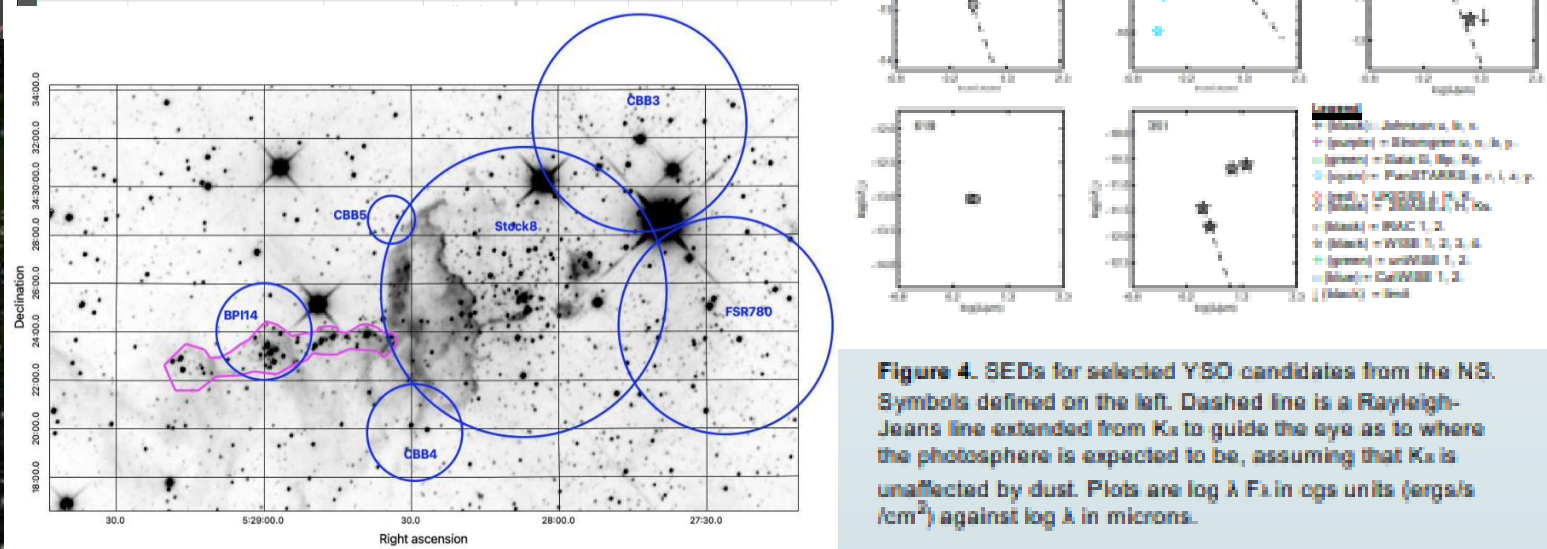
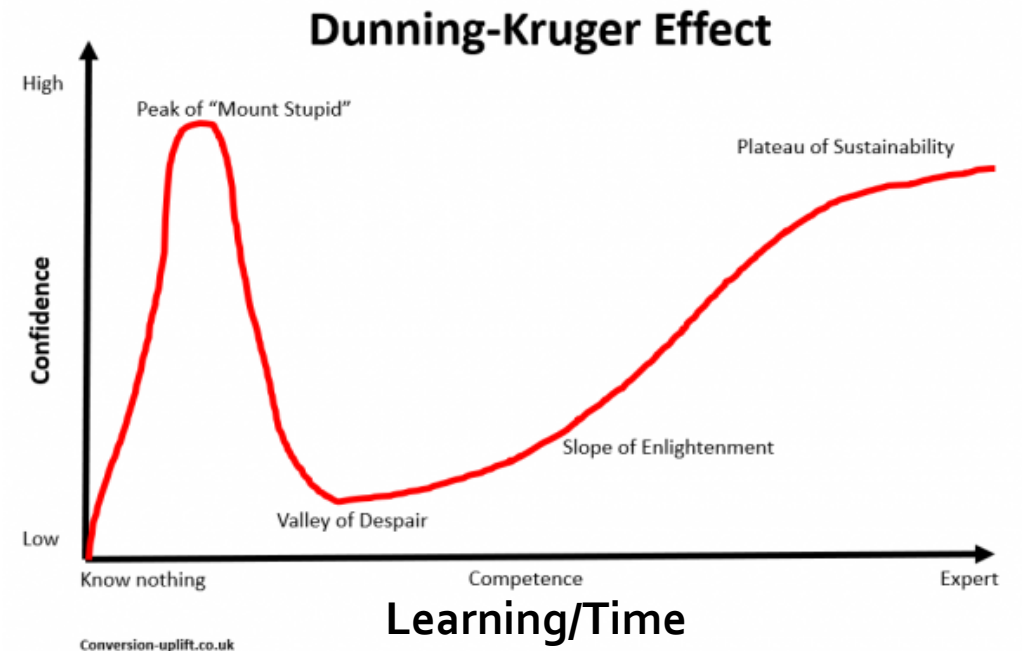


Figure 4. SEDs for selected YSO candidates from the NS. Symbols defined on the left. Dashed line is a Rayleigh-Jeans line extended from K_s to guide the eye as to where the photosphere is expected to be, assuming that K_s is unaffected by dust. Plots are $\log A F_\lambda$ in ergs/s / cm^2 against $\log \lambda$ in microns.

2. What Will Our Year Together Look Like?

I. Learning (January – Summer, and really always)

- Weekly Zoom/Webex/“telecon” meetings
- Learn (actively celebrate wonder and curiosity, actively challenge confusion)
- Become confused, frustrated, etc.
- Learn some more
- Learn some more
- Write the group proposal
- Onboard students as you choose them





2. What Will Our Year Together Look Like?

IV. Sharing Our Results at the 245th AAS (January '25 in DC)

(Slide Left Intentionally Blank)

3. What About the Students?

Who and How Many to Pick?

- NITARP pays up to 2 (can bring up to 4). None is an option, too. Can involve as many as you want back home.
- Selection Process? Up to you! Participation? Essays? Interviews? Cage matches?
- Same kids at Cali and AAS (strongly recommended)
- Seniors discouraged
- Be comfortable: Like them!

Student Responsibilities

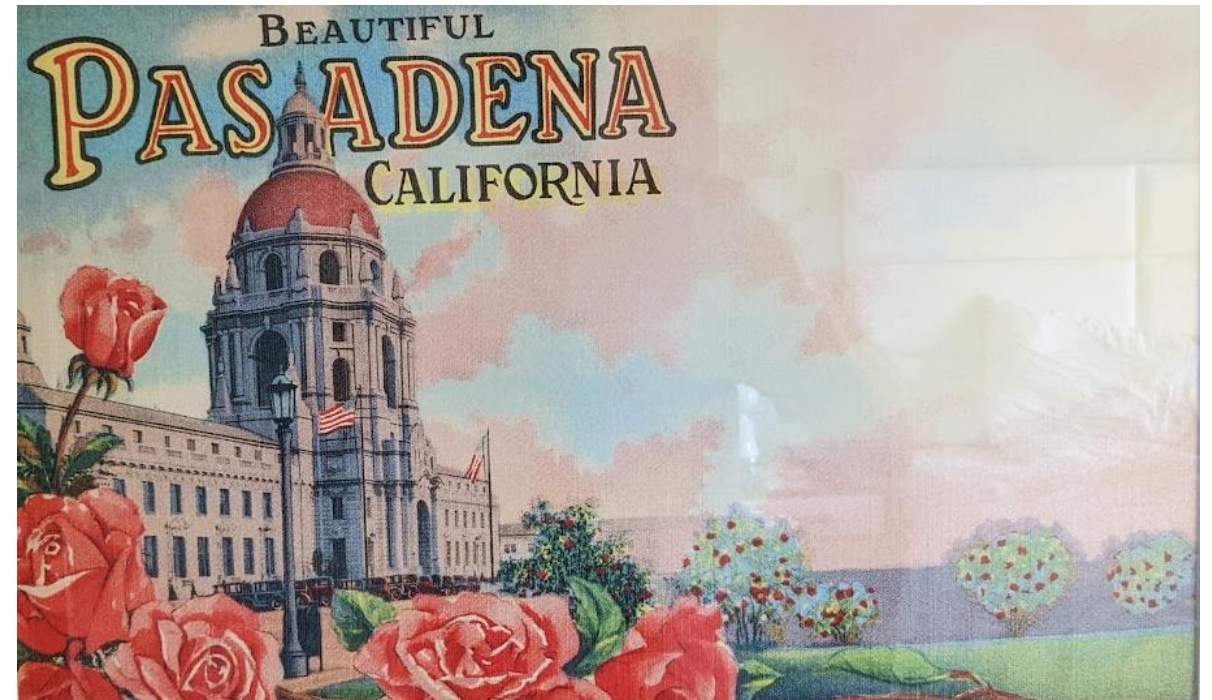
- Learn the science (from you and hopefully attend at least some telecons or watch the archived ones)
- Do the science: analyze the data & give input
- Present the science poster (with you) at the AAS

Advice to You as Their Teacher

- Enjoy the experience of learning with them
- Be prepared to lean on them: you'll help each other!

4. What About the Trips?

- **Trip 1: You're On It!**
- **Trip 2: Training in Cali (Five Days and Nights in Sunny Pasadena)**
Trip Extracurricular Possibilities:
 - Old Pasadena
 - Santa Monica Pier
 - Griffith Park & Observatory
 - Hollywood Boulevard
 - Dodgers Game
 - Mt. Wilson Observatory
- **Trip 3: Present in DC**

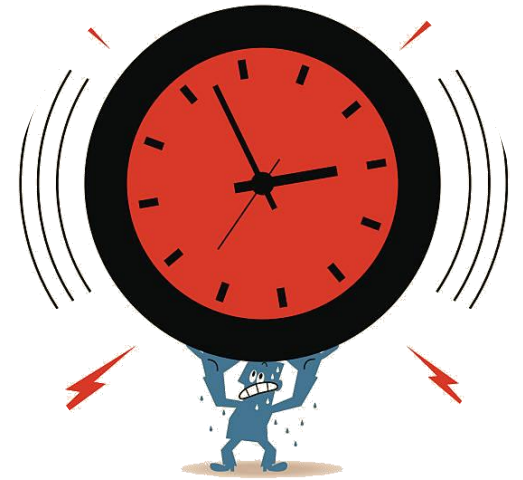




**BUT ABOUT THAT
WORK....**

5. What About the Workload?

- Weekly “Zoom” meetings ~hour
- Homework: Background reading and writing and analysis
- Some parts more work-intensive than others. These parts include the initial learning, proposal writing, data analysis, and poster prep
- What kind of work?
 - Reading & learning
 - Writing proposals
 - Organizing, Processing and Analyzing Data: using tools (IPAC IRSA viewer, Topcat, & Excel) to handle and calculate numerical data and visually check sources



6. What Are Some Benefits?

- Learn cool astro stuff
- Build your Grit and persistence
- Meet people
- Learn about astro opportunities
- Step out of your comfort zone and try something new
- Do authentic research
- Great experiences
- Become famous back home



7. Ummmm..... Advice???

- Ask questions... more than once... actively challenge confusion and lack of clarity
- Be open to the experience
- Be human
- COMMUNICATE, Communicate, communicate