Speckling Binaries

Observe Binary Stars and Model Their Orbits

Speckle Interferometry can virtually eliminate the twinkling caused by the atmosphere that limits our ability to separate two close stars. It enables us to see and measure closer binaries with their inherently more rapid relative motion (Kepler's Laws). Thus, we can see binaries with orbital periods only a few decades long. In this seminar we will observe and measure such close binaries using speckle interferometry, model their orbits, and prepare papers that may update their published orbits.

BOYCE-ASTRO ONLINE SEMINARS

SUMMER 2025

OBSERVING BINARIES WITH SPECKLE INTERFEROMETRY - COMBINED COURSE CALENDAR

MODULE	TOPICS	ASSIGNMENT FOR NEXT CLASS	DATE	TIME
0	Introduction/logistics/teams	Complete IntroSTARS™ before Module 1 Finish sign ups and downloads	28-May	Wed at 7:00 PM PT
1	Binaries and Fourier Analysis Speckle Interferometry	UNL orbital models Understanding the 6th Orbital Catalog	4-Jun	Wed at 7:00 PM PT
2	Speckle Tool Box (STB) Calibration -plate solving	Reduce sample data with STB Use PS3 for astrometric calibration	11-Jun	Wed at 7:00 PM PT
3	Observing with NINA at BARO Target list and team selections	Observe on BARO with NINA BARO STB data reductions	17-Jun	**Tues** at 7:00 PM PT
NOTE: This starts the BARO observations; weather will dictate after this.			BARO nights will depend on weather.	
4	**BEAR at MWO** (for BEAR partiicipants only)	Observe at MWO 60" Reduce data with STB at MWO	25-Jun 27-Jun	No Speckling Binary Zoom see BEAR daily schedule
5	Astronomy data /research Statistical results	Teams - Finish reductions Compile mean results	2-Jul	Wed at 7:00 PM PT
6	Ephemeris calculation STB - Orbits	Results Table with stats Create a draft orbital plot with STB	16-Jul	Wed at 7:00 PM PT
7	Analysis/ Discussion	Ephemeris optimizations	23-Jul	Wed at 7:00 PM PT
8	Posters and Papers	Draft of Poster or Paper	30-Jul	Wed at 7:00 PM PT

This class calendar applies to students taking Specling Binaries. All BEAR students parcipate in Speckling Binaries as well. The above are the joint classes for all students. BEAR has a daily schedule for the two days at Mount Wilson Observatory.

Completing IntroSTARS™ or another Boyce-Astro Seminar is the prerequisite for the seminar. If you have not taken our FREE IntroSTARS™ or another seminar, please sign up HERE

The IntroSTARS Quiz to qualify for the seminar will be sent to new students prior to Module 0. Those who have already passed the Quiz need not take it again. The class size is limited. High school and college students will be given preference. Note that the participants in the BEAR program will attend and participate in the Speckling Binaries online Zoom classes.

Application Deadline in May 19.The course fee is $49 and will be due June 6, 2025

Click Here to Apply