



PVPHS StellarXplorers An AFA Program



T-105 (T-building complex)

www.stellarxplorers.org

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About the program

Palos Verdes Peninsula High School (PVPHS) provides the opportunity to compete in the Air & Space Forces Association's (AFA) StellarXplorers Program.

Teams of 2-6 compete to solve realistic space scenarios – e.g. determining the optimal orbit to observe migrating whales, selecting the optimal satellite components to measure the moon's water, determining the launch vehicle and system to launch a satellite to another planet, etc. – in a six-hour period. Teams are forced to trade choices in order to maximize their points in a multi-variable problem and compete against hundreds of other teams worldwide.

Competition Timeline

All teams compete in 6 rounds: 3 practice rounds and 3 qualifying rounds. The sum of their scores over the 3 qualifying rounds is used to determine their advancement to the semi-finals round, where their score is wiped. Their performance in the semi-final round determines their selection for the finals rounds, where the teams are flown out to compete with the rest of the top 10 teams.

- Round 1: Orbit selection round, using Ansys STK
- Round 2: Satellite components selection
- Round 3: Launch system selection
- Semi-finals: Combines rounds 1,2,&3 into an 8-hr competition
- Finals: Combines Semi-Finals with a presentation to the StellarXplorers board

Prerequisites, Requirements, & Benefits

- *Prerequisites:*
 - None
- *Requirements:*
 - 100 hours of attendance
 - * *Competitions:* six 6-hr weekend competitions in fall and early spring
 - * *Training & Work Time:* bi-weekly lunch meetings
 - Forms & Donations
- *Benefits:*
 - Class credit:
 - * Serves as an elective (10 credits)
 - * A-F grade scale
 - Skills:
 - * Ansys STK, Spreadsheets, Keplerian Orbital Elements
 - Opportunities:
 - * National ranking in an AFA-sponsored competition
 - * All-paid for trip to Houston, TX if national qualifier

How to Join (Returning & New Members)

All members (returning and new members) need to apply to join the program.

- Fill out [this Google Forms](#) by September 5th.
 - There are 30 spots total; This form outlines the selection process.
- If you are a returning member, fill out the [last year's feedback form](#) by August 31st.
- Show up for Orientation on Thursday, August 31st, at T-106.
- We'll add you to our email list and communicate additional info there.

Questions?

Email:

- Oliver Ahern (Team President) at 588564@pvpusd.net for general questions.
- Mr. Twiet (Team Coach) at twieth@pvpusd.net if you have a private question.

Past Achievements

- 2022-23: 2 teams in the top 10 nation-wide, 5 teams qualified for Semi-Finals.
- 2021-22: 1st in the Nation, 3 teams qualified for Semi-Finals.