# **Astronomy Minor**

# The Dominey Observatory will open and expand services

## **Goal Description:**

The new Dominey Observatory is expected to complete initial construction and open doors to students and the public in the Fall of 2023.

Our goal is to use the observatory effectively for outreach, education, and science work. This requires establishing a full-time directorship and funding additional development at the site.

### Providing Department: Astronomy Minor

RELATED ITEMS/ELEMENTS -----

#### **RELATED ITEM LEVEL 1**

## **Readiness for continuing education in astronomy Learning Objective Description:**

Students graduating with the Astronomy Minor in conjunction with the Physics Major will be wellprepared to continue with graduate study in the discipline of Astronomy.

They will be familiar with foundational concepts in Solar System and Stellar / Galactic Astronomy.

They will have been exposed to contemporary advanced topics in astronomy relating to high-energy "Cosmic Catastrophes" and the conditions for Life in the Universe.

They will be experienced in the methodology of astronomical data collection and processing, including the operation of modern scientific telescope.

#### **RELATED ITEM LEVEL 2**

#### Indicators for success in the minor.

#### **Indicator Description:**

Indicators for success in the minor are related to growing enrollment and interest in the program.

#### **Criterion Description:**

The initial target for students enrolling in the Astronomy Minor is ten new students per year.

#### **Findings Description:**

The upper division astronomy courses have been on hold for one year and will resume in Fall 2025, with a goal for annual offerings thereafter.

There are findings based on pre/post testing in the introductory astronomy courses, which feed into the minor.

Below are the results of pre/post content surveys in the Fall 2023 Stars & Galaxies course as well as

the Spring 2024 Solar System course. A content survey of concepts covered throughout each course was administered the first week of class, and again the last day of class, both times unannounced. The purpose is to see what preconceptions students having coming into the course and find out how well they retain the information, without the aid of studying. Averages pre and post are listed for each section. A normalized gain is also calculated.

Fall 2023 (PHYS1403) Section 2

pre-test: 30% post-test: 53% normalized gain: .34 (medium gain)

#### Section 3

pre-test: 30% post-test: 51% normalized gain: .30 (medium gain)

Spring 2024 (PHYS1404) Section 2

pre-test: 33% post-test: 50% normalized gain: .27 (medium gain)

#### **RELATED ITEM LEVEL 3**

## **Observatory Funding Actions**

## **Action Description:**

Deliver daytime activities for student groups based on the recent \$200,000 gift from Mrs. Barbary Dominey. Seek external funding to supplement this and also to support a director's position.

# New Update to Previous Cycle's Plan for Continuous Improvement Item

## **Previous Cycle's Plan For Continuous Improvement (Do Not Modify):**

## **Closing Summary**

The Astronomy Minor enrolled about 10 students in its first class, and the pair of new upper-division courses were successfully instructed by Professors James and Miller.

Per communication with COSET Dean's office, further meta-assessment will be deferred for a year, pending the collection of additional experience with the new program.

## Update of Progress to the Previous Cycle's PCI:

The observatory was opened and several astronomy students were supervised in research.

Course offerings were on an off-cycle of the the 2-year cadence, but will resume in Fall 2024.

# New Plan for Continuous Improvement Item

## **Closing Summary:**

We will expand the new observatory.

We will formalize a 1-credit hour seminar course to close the "gap" in the 18-hour curriculum for the minor.

We will expand research opportunities to students in the minor.

We will partner with graduates who work in the space sector.

We will partner with the community and educators in the surrounding area.