Nicole Arulanantham

joined STScI as a Giacconi Fellow in 2020. Her research focuses on young star and planet formation, with a particular emphasis on joint UV/IR spectroscopy of protoplanetary disks.

Nicole received her PhD in Astrophysics from the University of Colorado Boulder, her MA in Astronomy from Wesleyan University, and her BS in Astrophysics from University of California, Los Angeles.

Title: The infrared view of KH 15D: looking ahead to disk, outflow, and protoplanet observations with JWST

Abstract: Infrared photometry and spectroscopy of KH 15D have revealed the properties of a number of physical structures within the system. ANDICAM and Spitzer data constrain the size distribution of small dust at the edge of the circumbinary ring, while GNIRS reflectance spectra show the composition of icy grains. Accretion signatures and outflowing gas are detected as well, and J and H band colors are consistent with excess emission from a young protoplanet. With the recent commissioning of JWST, a number of programs are now dedicated to systematic studies of warm dust grains and ice absorption features in protoplanetary disks, forbidden line emission from jets and outflows, and spectroscopic features of planetary mass companions. We'll discuss the insights gained from this work to date – along with the unique advantages that can come from observing everything at once in KH 15D.

Catrina Hamilton-Drager

is a Senior Associate Provost for Academic Affairs; Associate Professor of Physics and Astronomy at Dickinson College. Her research focuses mainly on young stars in the process of forming. She has examined the rotation rates of stars in clusters of different ages to trace the evolution of angular momentum.

Catrina earned her Ph.D. from Wesleyan University, her M.S. from Arizona State University, and her B.S. from Mount Holyoke College

Title: The history of KH 15D and the status of observations and new interpretations

Abstract: Just over twenty-five years ago the variable star, V582 Mon, was re-discovered by Kearns and Herbst and henceforth has also been known as KH 15D. In this talk, I will review the history of this intriguing system, and what it represents: an opportunity to study a pre-main sequence (PMS) binary system still embedded in an accretion disk. The steady precession of the occulting circumbinary (CB) ring has allowed us to derive the stellar properties of both stars and presents us with the opportunity to refine and expand current models of the system. This should lead to a strong test of PMS models. I will review the most recent observations and results and discuss some new interpretations of “old” data.

James Greenwood

is an Earth and Environmental Studies professor at Wesleyan University who is also a part of the vigorous and growing planetary science program. He has published and co-authored many articles on a wide variety of topics.

Jim earned his Ph.D. from Brown University, his M.S. from Brown University, and his B.S. from SUNY at Binghamton

Title: Uncle Bill's Model for Chondrules (and everything else, including the kitchen sink!)

Abstract: The most volumetrically important object in meteorites are small little glass and crystal beads known as Chondrules. Over the past twenty years, Bill and I have collaborated on a new model for the formation of chondrules and the chondritic meteorites where they are found. I will summarize the odyssey of the last two decades and the evolution of this model from a wild and crazy idea to now becoming almost mainstream.

Joshua Winn

is a Professor of Astrophysical Sciences and Director of Graduate Studies at Princeton University. He has been at Princeton since 2016.

Josh graduated from M.I.T. in 1994 with BS and MS in physics. After spending a year as a Fulbright Scholar in the UK, at Cambridge University, he returned to M.I.T. as a Hertz Fellow. He earned a Ph.D. in physics in 2001.

Title: Five Years of TESS

Abstract: The Transiting Exoplanet Survey Satellite (TESS) is NASA's ongoing mission to discover planets outside the solar system, and more generally, to explore the bright and time-variable sky. TESS uses four 10cm optical telescopes to perform precise time-series photometry over wide fields of view. In the five years since it was launched, TESS has covered nearly the entire sky, leading to the confirmation of 330 new planets and the identification of about 6000 planet candidates that are being followed up by ground-based observers. The initial goal of the TESS Mission — to detect 50 planets smaller than Neptune and measure their masses — was achieved in 2021, and now TESS is in an Extended Mission with broader goals. I will review the history of TESS since its inception in 2006, and the most important and interesting results that have been achieved thus far.