

UC SANTA BARBARA
Kavli Institute for
Theoretical Physics

Friends of KITP Chalk Talk

Uncovering the Nature of Dark Matter with Stellar Streams in the Milky Way

Globular clusters are large congregations of stars, which gradually lose their members to form thin and long stellar streams. In pristine conditions, these streams have a nearly uniform density, however, new observations of one such structure in the Milky Way halo have revealed a likely site of perturbation. The on-sky morphology suggests a recent, close encounter with a massive and dense perturber. Known baryonic objects are unlikely perturbers based on their orbital properties, but observations permit a low-mass clump of dark matter as a plausible candidate. This discovery opens up the exciting possibility that detailed observations of streams could measure the abundance of dark-matter substructure and thus shed light on the nature of dark matter.

Wednesday, March 20th

5:30 PM - Courtyard Reception

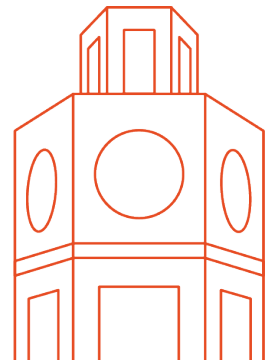
6:15 - 7:15 PM - Presentation and Discussion

Attendance by Reservation only

RSVP by Friday, March 15th

Online at <https://www.kitp.ucsb.edu/chalk-talk-rsvp>

By phone 805-893-6350 or email friends@kitp.ucsb.edu



Ana Bonaca is a Fellow at the Institute for Theory and Computation, hosted by the Center for Astrophysics | Harvard & Smithsonian. She works on creating a 3D, high-resolution map of the Milky Way halo, which is dominated by the elusive dark matter. In her research, she collects and employs data from ground- and space-based observatories, analyzes numerical simulations and develops new statistical tools. Ana obtained an Astronomy PhD from Yale University and was awarded the Brouwer prize for a distinguished thesis.

Lot 10 parking

As you enter campus from Highway 217, turn right onto Mesa Rd, merge into the left lane, and at the stop light turn left into Parking Structure 10. Park, buy a permit from the dispenser (near the elevator and stairs), and display the permit on your dashboard. KITP is right next door to the parking structure.