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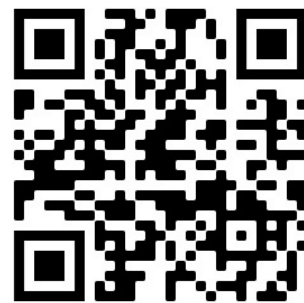
at

UC San Diego

Conduct cutting-edge research in instrumentation, observation, computation, and theory with faculty experts in exoplanetary & stellar science, galactic & extragalactic astrophysics, the interstellar medium, general relativity, particle astrophysics, and cosmology, using some of the best astronomical and research facilities in the world.

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Find your astronomical passion

Cosmology

UC San Diego excels in studying the origins of the universe through the development of new cosmic microwave background experiments led by [Kam Arnold](#) and [Brian Keating](#), and theoretical cosmology and fundamental physics by [Raphael Flauger](#) and [Dan Green](#).

Galaxy Formation & Evolution

[Alison Coil](#) and [Shelley Wright](#) study high-redshift galaxies and supermassive black holes to better understand how they form and evolve. [David Tytler](#) studies big-bang nucleosynthesis with measurements of quasar absorption line systems. [Dusan Keres](#) and [Michael Norman](#) use hydrodynamical simulations to investigate the physics of galaxy formation.

Particle Astrophysics & Dark Matter

[George Fuller](#) investigates neutrino physics in supernova core collapse and the early universe. [Tongyan Lin](#), investigates computational and theoretical methods for testing properties of dark matter

Stars, Exoplanets, & Astrobiology

[Adam Burgasser](#) studies the spectra of the coldest stars, brown dwarfs and exoplanets. [Quinn Konopacky](#) studies the orbits and atmospheres of exoplanets. [Shelley Wright](#) designs and operates optical SETI experiments

Star Formation & the ISM

[Karin Sandstrom](#) uses multi-wavelength observations of nearby galaxies to study star formation and the properties of the interstellar medium. [Quinn Konopacky](#) studies nearby star-forming regions at high resolution.

Solar & Plasma Physics

[Pat Diamond](#) uses theory to explore magnetic dynamos, accretion processes, and turbulent plasma flows

High Energy Astrophysics

[Steven Boggs](#) is a gamma-ray observer who conducts detailed measurement of radioactive nuclei produced in supernova explosions.

Learn new tools to study the Universe

Observation

UCSD observers have access to [Lick Observatory](#), [Keck Observatory](#), and in the future the [Thirty Meter Telescope](#). Observational researchers also make use of best facilities on and off the planet, including the *Hubble Space Telescope*, the *James Webb Space Telescope*, *Chandra*, *JVLA*, *ALMA*, *CHARA*, and others.

Computation

UCSD is home to the [San Diego Supercomputer Center](#) (SDSC) which enables advanced high-performance computing. The [Halicioğlu Data Science Institute](#) brings together researchers and students interested in data science.

Instrumentation

The [Cosmology Group](#) maintains multiple laboratories aimed at developing new technologies and instrumentation for CMB detection with the *Simons Observatory* and *LiteBIRD*. The [Optical and Infrared Laboratory](#) develops facility-class instruments for large telescopes, including *Keck* and *TMT*.

Theory

UCSD is a partner in the [N3AS Collaboration](#) - the Network for Neutrinos, Nuclear Astrophysics, and Symmetries, which aims to develop the theory tools for interpreting observations of some of Nature's most extreme environments.