

Opis delovnega mesta mladega raziskovalca/ke (*Description of the Young Researcher's position*)

1. Članica UL (*UL member*):

Fakulteta za matematiko in fiziko

2. Ime, priimek in elektronski naslov mentorja/ice (*Mentor's name, surname and email*):

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3. Raziskovalno področje (*Research field*):

1.02.03 Astronomija / Astronomy

4. Opis delovnega mesta mladega raziskovalca/ke (*Description of the Young Researcher's position*):

Vključuje morebitne dodatne pogoje, ki jih mora izpolnjevati kandidat/ka za mladega raziskovalca/ko, ki niso navedeni v razpisu za mlade raziskovalce.

slo:

Kandidat-ka bo gradil-a na močnem sodelovanju raziskovalne skupine pri opazovanjih z vesoljskim teleskopom James Webb Space Telescope (JWST). Uporabil-a bo globoka opazovanja največjega vzorca najmočnejših kozmičnih teleskopov z JWST. Kandidat-ka bo vključen-a v znanstveni primer za preučevanje obdobja reionizacije (glej spodaj) kot član programa CANUCS (CANadian NIRISS Unbiased Cluster Survey) z zajamčenimi opazovanji (GTO) s kamero Near- Infrared Imager and Slitless Spectrograph (NIRISS). Glavni cilj je raziskovanje kozmičnega temnega veka. To je obdobje, ko je bilo vesolje napolnjeno z nevtralnimi vodikom, ki je bil neprozoren za ultravijolično svetlobo in naj bi se končalo približno 500 milijonov let po velikem poku, ko so prvi svetlobni viri proizvedli dovolj energijskih fotonov za ionizacijo nevtralnega vodika. To fazo imenujemo obdobje reionizacije in je tudi doba nastanka prvih galaksij. Vendar je to tudi eno najmanj poznanih obdobjev v razvoju vesolja. Pričakujemo, da bodo rezultati objavljeni v pomembnih mednarodnih znanstvenih revijah. Zaželeno je, da ima kandidat-ka magisterij iz fizike in da je poslušal-a tudi predmete s področja astronomije oziroma astrofizike. Predlagana raziskava prihaja ob pravem času, saj je JWST šele začel pridobivati prve podatke. Tako bo strokovno znanje, ki ga bo kandidat-ka pridobil-a med doktorskim študijem, predstavljalo prednost za njegovo/njeno nadaljnjo uspešno raziskovalno kariero.

eng:

The candidate shall build on a strong involvement of the research group in observations of the James Webb Space Telescope (JWST). He/she will use deep observations of the largest sample of the most powerful cosmic telescopes with JWST. The candidate will be involved in the science case to study the epoch of reionization (see below) as a member of the Near-Infrared Imager and Slitless Spectrograph (NIRISS) Guaranteed Time Observations (GTO) program CANUCS (CANadian NIRISS Unbiased Cluster Survey).

The main goal is the exploration of the cosmic dark ages. This is an era when the Universe was filled with neutral hydrogen that was opaque to ultraviolet light and is thought to have ended

around 500 million years after the Big Bang, when first light sources produced enough energetic photons to ionize the neutral hydrogen. This phase is referred to as the epoch of reionization and is also the era of the first galaxies' formation. However, this is also one of the least understood epochs in the Universe's evolution.

Research results shall be published in top scientific journals. A master in physics with some astronomy-related courses will be considered an advantage in the candidate selection process. The proposed research is timely, as JWST has just been launched and has started to obtain the first data. So an expert knowledge gained by the candidate during the PhD studies will present an advantage for his/her further successful research career.