Astronomija

(Departmanu za Geografiju)

- vežbe -

Milan Milošević
Departman za fiziku
Prirodno-matematički fakultet u Nišu

Milan Milošević

- Istraživač saradnik, Departman za fiziku PMF

- Kabinet 306. (III sprat)
- E-mail: mmilan@svetnauke.org
- Web: www.svetnauke.org i www.mmilan.com
- /mmilann /mmilan

- Konsultacije: utorak, 14-16h

Posetite i

- Astronomsko društvo „Alfa“
  - www.alfa.org.rs
- Facebook stranica AD Alfa
  - www.facebook.com/alfa.nis

- Astronomski magazin
  - www.astronomija.org.rs

Program

- Prividna i apsolutna zvezdana veličina; sazvežđa; koordinate i koridinatni sistemi; katalozi; vrteća karta, Stellarium, Celestia i Android aplikacije
- Teleskop – tipovi, konstrukcija, uvećanje itd.
- Praktičan rad sa teleskopom
  - Večernje posmatranje
  - Posmatranje Sunca
- Merenje rastojanja u svemiru
- CLEA vežbe
  - Sunčeve pege i rotacija Sunca
  - Galilejevi sateliti
  - Spektralna klasifikacija zvezda
  - Pulsari
  - Određivanje starosti svemira

Korisni linkovi

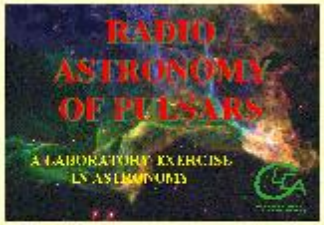
- Stellarium, Celestia i Teleskop simulator (DSO)
  - www.stellarium.org
  - http://celestia.sourceforge.net/
  - https://dso-browser.com
- Projekat CLEA
  - http://www3.gettysburg.edu/~marschal/clea/cleahome.html
- Sky Map (Android)
  - https://play.google.com/store/apps/details?id=com.google.android.stardroid&hl=sr
- Go-lab, Inspiring Science, Hand on Universe, Space Awareness
  - http://www.go-lab-project.eu/
  - http://inspiringscience.eu/
  - http://handsonuniverse.org/
  - http://www.space-awareness.org/en/

Stellarium

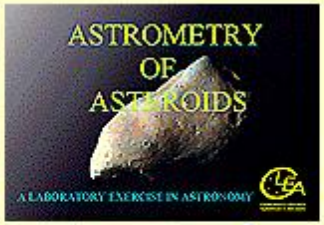
Projekat CLEA

Projekat CLEA

- “Contemporary Laboratory Experiences in Astronomy”
- http://www3.gettysburg.edu/~marschal/clea/CLEAhome.html
- Podrška:
  - NASA
  - Gettysburg college
- Svaka vežba:
  - Program
  - Uputstvo
  - Tehničko uputstvo
- Posle 22 godine nema novih verzija ☹

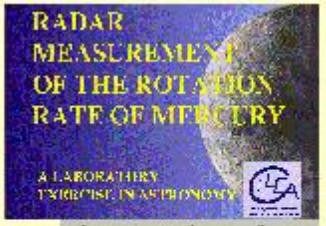


Radio Astronomy of Pulsars

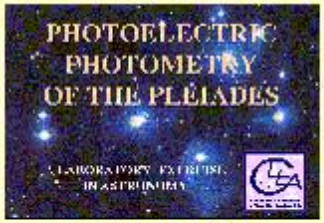


Astrometry of Asteroids

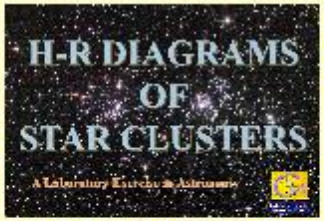
The Revolution of the Moons of Jupiter



The Rotation of Mercury by The Doppler Effect



Photoelectric Photometry of the Pleiades



HR Diagrams of Clusters

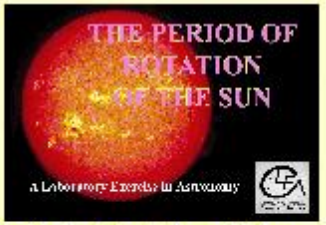
Spectral Classification of Stars

The Hubble Relation

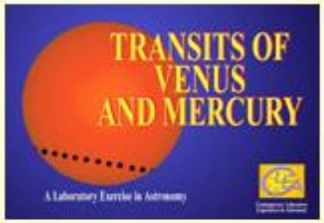
The Large Scale Structure of the Universe

Flow of Energy Out of the Sun

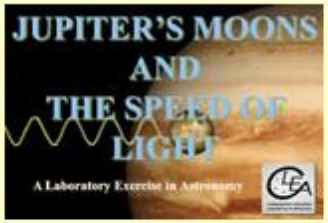
The Quest for Object X



Solar Rotation Using Images from the GONG Project



Transits of Venus and Mercury Using Images from the GONG project



Jupiter's Moons and the Speed of Light: The Classic Roemer Experiment

Dying Stars and the Birth of the Elements

The Height of Lunar Mountains (From an associated NON CLEA DEVELOPER)

VIREO

- The Virtual Educational Observatory
- Najnoviji program, objedinjuje mnogo prethodnih vežbi
  - simulira realno nebo
  - nekoliko miliona objekata
  - Vizuelni, radio i IC teleskop
  - Različita oprema (fotografija, fotometrija, spektrografija...)
  - Alati za analizu podataka

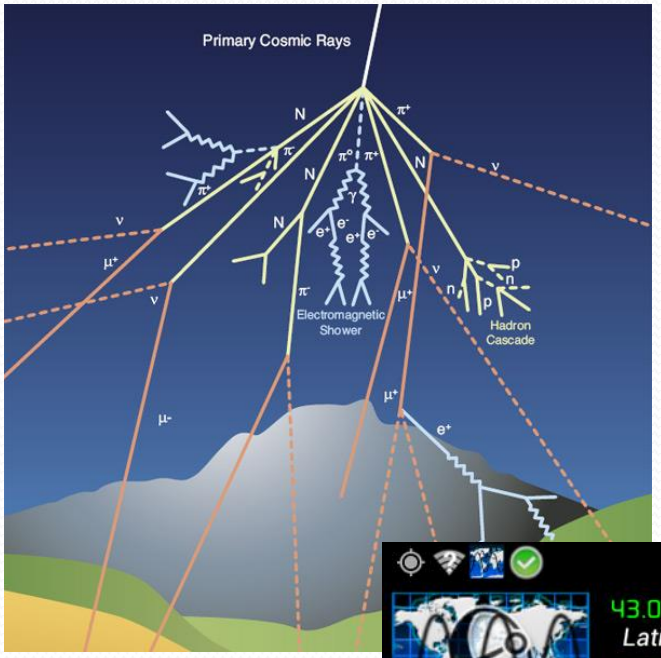
Android aplikacije

Android aplikacije

- Google Sky Map
- Night Sky Tools
- Projekat DECO
  - (Distributed Cosmic-ray Observatory)
    http://wipac.wisc.edu/deco
- CRAYFIS
  - http://crayfis.io/

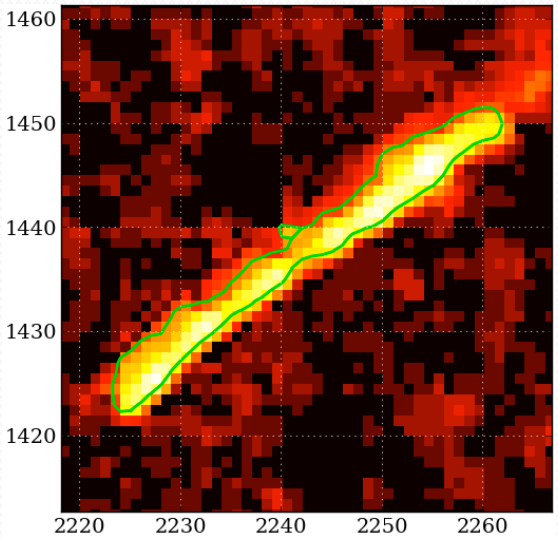
Projekat DECO

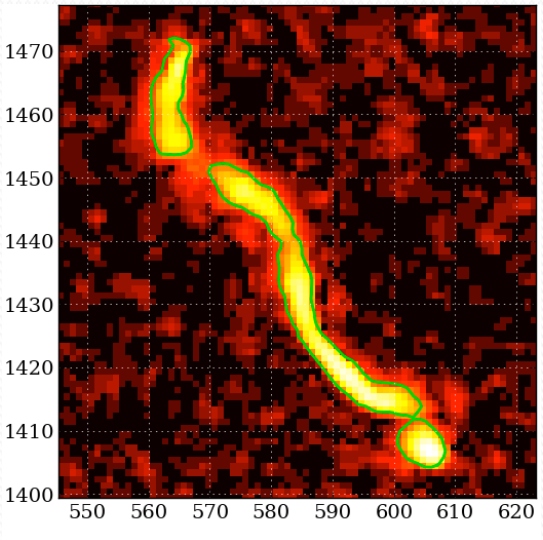
DECO
Distributed Electronic Cosmic-ray Observatory

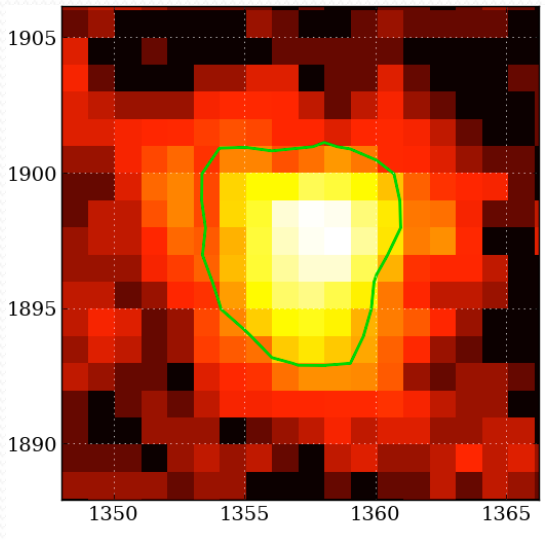


- Snima fotografije 1-2 sekunde
- Dovoljno sjajnih piksela – kandidat
- Nova analiza – proverava događaj
- Kosmičko zračenje – mioni
  - Drugi događaji: elektroni, gama zraci, alfa čestice (radioaktivno zračenje okoline)
- Nekoliko događaja za 24h

Projekat DECO - događaji







- Mion, kosmičko zračenje
- Elektron (radioaktivno zračenje, direktno ili gama zračenje koje je “pogodilo” elektron)
- Elektron ili gama zračenje

Pitanja?