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Research Groups & Projects

Experimental Astrophysics

Ground Based Radio Astronomy Station IAP-SWRDA
Infrared Sensor IAP-IRS
Spectroscopy Analysis Station IAP-SPECT
Meteorological Satellite Project IAP-SAT

Theoretical Astrophysics

Models for Pulsars, Supernovae, and Interstellar Media Processes

Publications 2010 – 2018 Full texts on <http://aecenar.com/publications>

Addresses

German Branch: Im Klingenhühl 2a, 69123 Heidelberg, *Germany*

Lebanese Branch: Bahsas, Haykalieh Str., Harba Bld., Ground Flr., Tripoli, *Lebanon*

Contact

Institute Director

Dr. Eng. Samir Mourad

Mobile +49 178 72 855 78 / +961 76 341 526

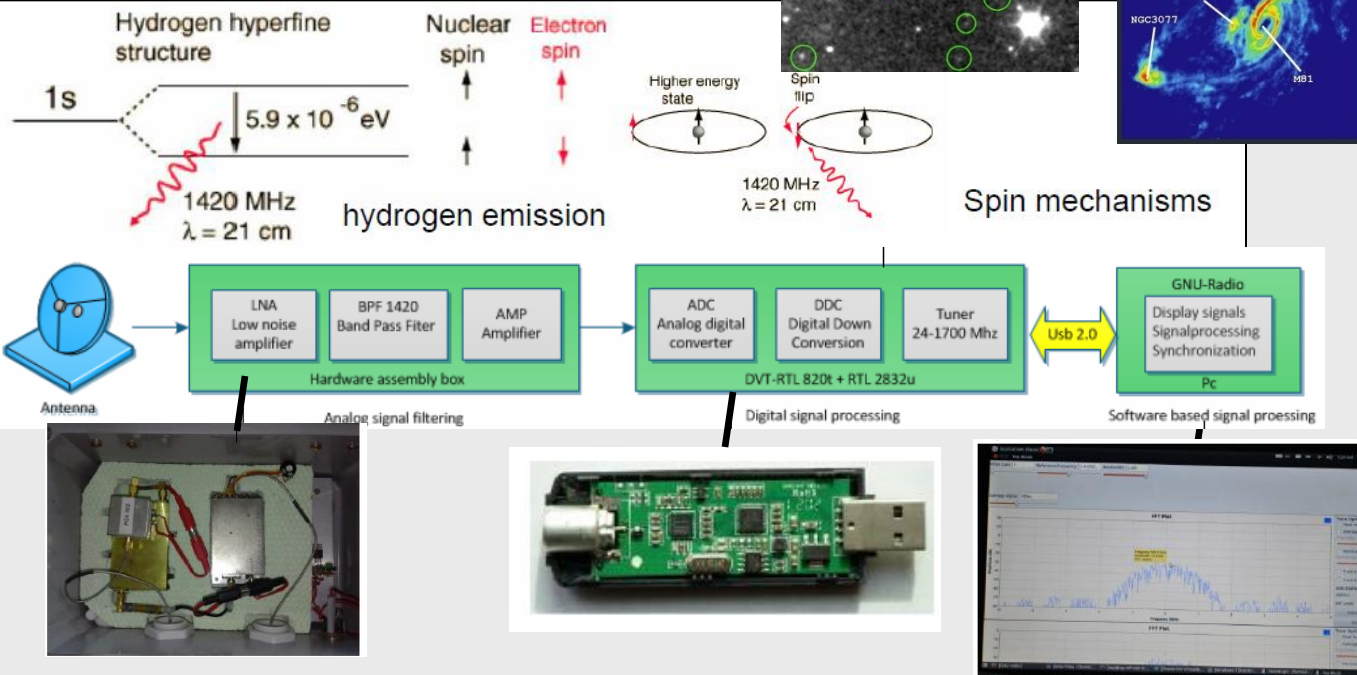
Email: samir.mourad@aecenar.com

Student affairs

B.Sc. Mariam Mourad

E-Mail: mariam.mourad@aecenar.com

Ground based station for supernova remnant HI line radio wave detector and analyzer (SRWDA)



Next Working Packages (2018 – 2021):

Installing Ground Station, Development of precise gimbaled antenna to be able to take precise data from specific segments, Phase arrayed antenna development

Ground based infrared sensor IAP-IRS

IR Astronomy

Next Working Packages (2018 – 2021):

- Design of a proper infrared sensor
- Collect IR data from Canopus Region



Illustration 1 : Caption: Black Widow nebula captured by Spitzer's IRAC. Credit: NASA/JPL-Caltech/E. Churchwell (University of Wisconsin-Madison) and the GLIMPSE Team

Spectrometer IAP-SPECT

Spectrometrical Analysis of Visual Data

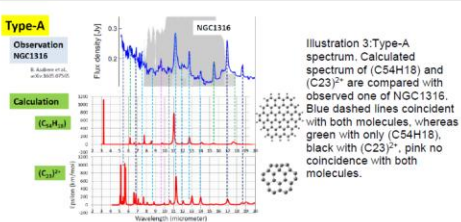


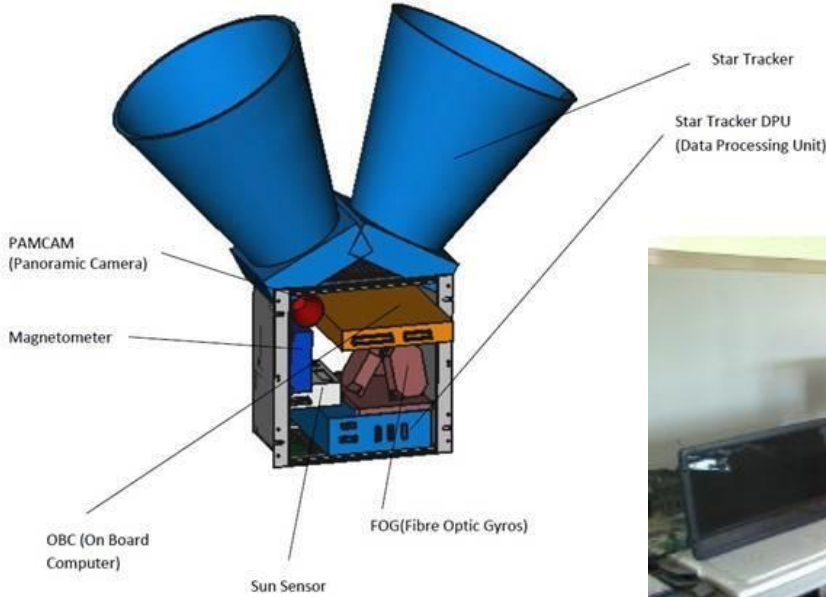
Illustration 3: Type-A spectrum. Calculated spectrum of (C54H18) and (C23)⁺ are compared with observed one of NGC1316. Blue dashed lines coincident with both molecules, whereas green with only (C54H18), black with (C23)⁺, pink no coincidence with both molecules.

Next Working Packages (2018 – 2021):

- Building of Spectrometrical Station IAP-SPECT

Space Based Platform IAP-SAT

Satellite Bus

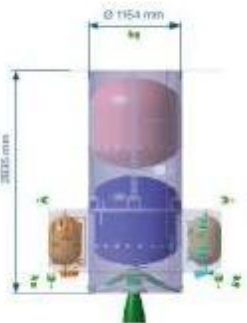


CHEMICAL ORBITAL PROPULSION MODULE

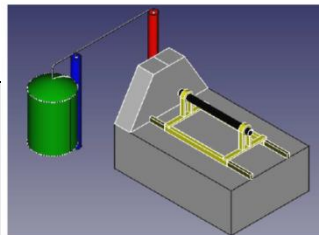
Chemical Orbital Propulsion Module for transfer orbit, attitude maneuver during transfer orbit, station keeping and deorbiting.

EPDM - BLADDER TANK BT 01/0

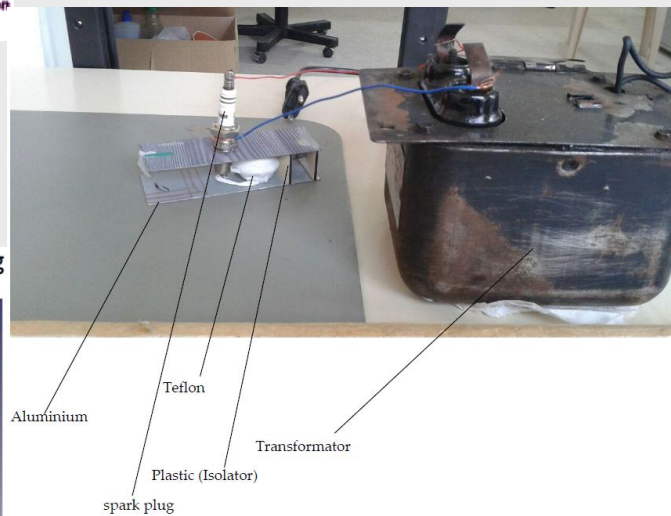
Bi-propellant UPS B2
Propellant Loading Mass: 1600 kg

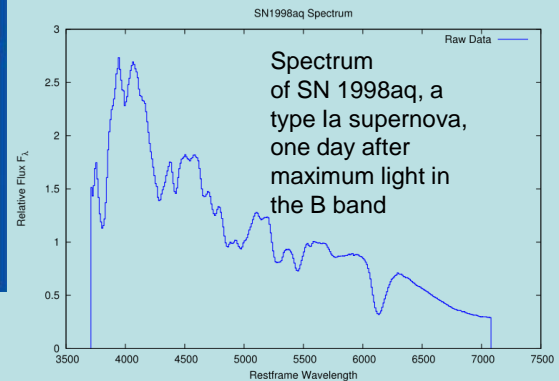
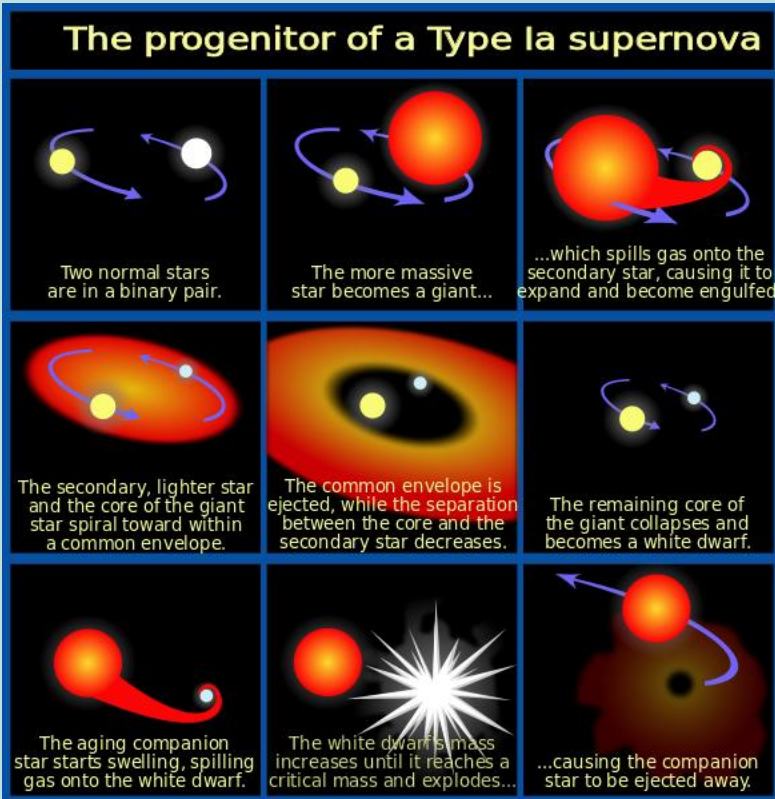


Chemical Propulsion Testrig

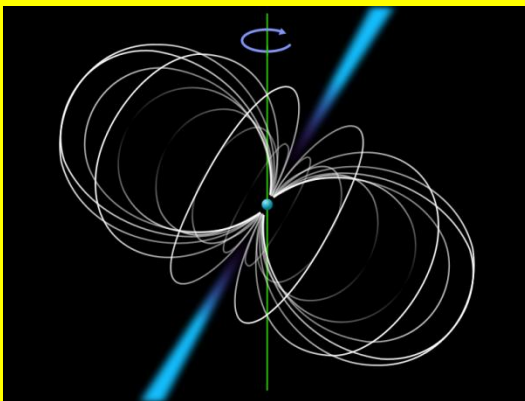


Electrical Propulsion Unit

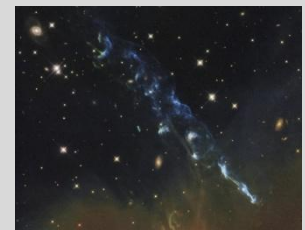
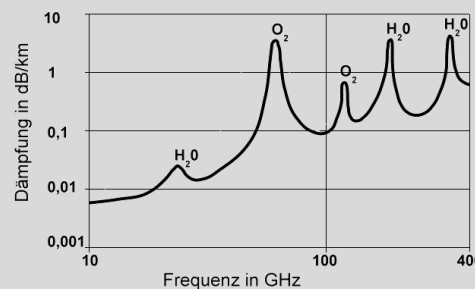




Models for Supernovae



Models for Pulsars



Models for Interstellar Media (ISM) Processes

Areas:

Plasma Physics, Thermodynamics, Magnetohydrodynamics (MHD), thermo-nuclear star processes, fusion processes, object orientated programming (C++/qt)