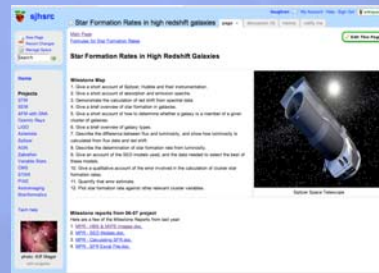


Establishing a School-Based Research Community (SRC) for Astronomy

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The Nature of SRC

- a colony of scientific community inside a K-12 institution
- a range of projects with multi-year focus beyond the individual student's own learning or achievement
- a set of enduring commitments to scientific organizations outside of school
- contribution-focused, rather than learning-focused
- motivation comes from choice of project whose importance is enhanced by broader ownership from the scientific community
- milestone map and references provide ladder for each participant to climb, extend, enable others to climb and extend further
- contemporary (web 2.0) communication, research, collaboration tools



Some SRC Projects

- NOAO projects: Nova Search, Variable Stars, AGN, Asteroids
- Spitzer/NOAO: Star Formation Rate in High Redshift Galaxy Clusters
- astro-imaging (in supporting role)
- e-Labs with LIGO environmental sensing data, CMS test beam
- other projects in scanning probe microscopy, bioinformatics, etc provide indirect broader exposure, cross-disciplinary analogies, inter-disciplinary collaboration
- next: computational science support

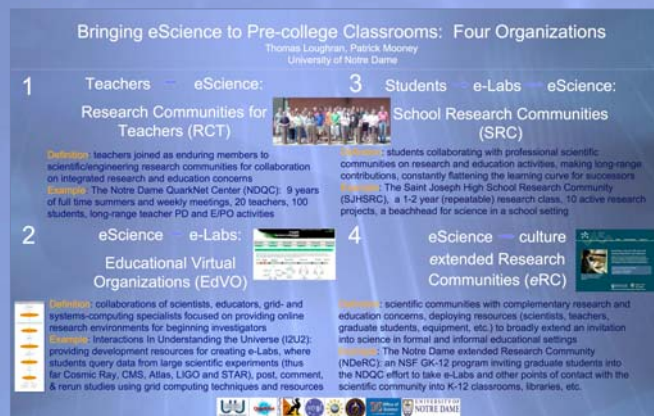


K16 Magor's rendering of the Eagle Nebula (M16, IC 507, Sh 2-28) and Violet Flares from KPNO 8m Telescope at Cerro Parí taken by students in NOAO's 2004 TARBEE program, plus a 6th IR layer, processed at Saint Joseph's High School with Photoshop using NASA's FITS Liberator.



Conditions for establishing SRC

- required to start: curricular space (Advanced Topics in Indiana), administrative support, RET-style teacher training; a selection of topics; performance assessment strategy
- required to flourish: a full complement of opportunities and organizations for enduring collaboration between K-12 and mature scientific research communities



SRC Outcomes for Stakeholders

- teachers, students achieve a sense of belonging to the scientific community, increase their collaboration and research skills, and broaden and deepen their scientific literacy
- teachers gain a coherent professional development trajectory
- education/public outreach professionals get enduring K-12 partners, test beds for outreach activities
- scientists at universities gain outlets for their concern for K-12 STEM education; reliable, experienced outreach partners for funding proposals; and renewed focus on undergraduate research
- school administrators gain increased exposure for successful STEM activities, helping them recruit teachers and attract funding
- school districts gain test beds for developing activities prior to mainstreaming them in more traditional course settings

