COOLNEWS

A RESEARCH NEWSLETTER DEDICATED TO COOL STARS AND THE SUN

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TABLE OF CONTENTS

Stellar Abstracts

Are Coronae of Magnetically Active Stars Heated by Flares? III. Analytical Distribution of Superimposed Flares

Kaspar Arzner[1] and Manuel Güdel[1]

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We study the hypothesis that observed X-ray/extreme ultraviolet emission from coronae of magnetically active stars is entirely (or to a large part) due to the superposition of flares, using an analytic approach to determine the amplitude distribution of flares in light curves. The flare-heating hypothesis is motivated by time series that show continuous variability suggesting the presence of a large number of superimposed flares with similar rise and decay time scales. We rigorously relate the amplitude distribution of stellar flares to the observed histograms of binned counts and photon waiting times, under the assumption that the flares occur at random and have similar shapes. Our main results are: (1) The characteristic function (Fourier transform of the probability density) of the expected counts in time bins Δt is $\phi_F(s, \Delta t) = \exp\{-T^{-1}\int_{-\infty}^{\infty} dt\, [1 - \phi_a(s\, \Xi(t, \Delta))]\}$, where T is the mean flaring interval, $\phi_a(s)$ is the characteristic function of the flare amplitudes, and $\Xi(t, \Delta t)$ is the flare shape convolved with the observational time bin. (2) The probability of finding n counts in time bins Δt is $P_c(n) = (2\pi)^{-1}\int_0^{2\pi} ds\, e^{-ins}\phi_F(s, \Delta t)$. (3) The probability density of photon waiting times x is $P_\delta(x) = \partial_x^2 \phi_F(i, x)/\langle r\rangle$ with $\langle r\rangle = \partial_x \phi_F(i, x)|_{x=0}$ the mean count rate. An additive independent background is readily included. Applying these results to EUVE/DS observations of the flaring star AD Leo, we find that the flare amplitude distribution can be represented by a truncated power law with a power law index of 2.3 ± 0.1. Our analytical results agree with existing Monte Carlo results of Kashyap et al. (ApJ 580, 1118, 2002) and Güdel et al. (ApJ 582, 423, 2003). The method is applicable to a wide range of further stochastically bursting astrophysical sources such as cataclysmic variables, Gamma Ray Burst substructures, X-ray binaries, and spatially resolved observations of solar flares.

Accepted by ApJ

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For preprints via ftp or WWW: http://www.astro.phys.ethz.ch/papers/guedel/guedel_p.html

HST/STIS High Resolution Echelle Spectra of α Centauri A (G2 V)

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We describe and analyze HST/STIS observations of the G2 V star α Centauri A (α Cen A, HD 128620), a star similar to the Sun. The high resolution echelle spectra obtained with the E140H and E230H gratings cover the complete spectral range 1133-3150 Å with a resolution of 2.6 $\mathrm{km\,s^{-1}}$, an absolute flux calibration accurate to $\pm 5\%$, and an absolute wavelength accuracy of 0.6–1.3 $\mathrm{km\,s^{-1}}$. We present here a study of the E140H spectrum covering the 1140–1670 Å spectral range, which includes 671 emission lines representing 37 different ions and the molecules CO and H_2. For α Cen A and the quiet and active Sun, we intercompare the redshifts, nonthermal line widths, and parameters of two Gaussian representations of transition region lines (e.g., Si IV, C IV), infer the electron density from the O IV intersystem lines, and compare their differential emission measure distributions. One purpose of this study is to compare the α Cen A and solar UV spectra to determine how the atmosphere and heating processes in α Cen A differ from the Sun as a result of the small differences in gravity, age, and chemical composition of the two stars. A second purpose is to provide an excellent high resolution UV spectrum of a solar-like star that can serve as a proxy for the Sun observed as a point source when comparing other stars to the Sun.

Accepted by A&A

For preprints contact: ipa@ct.astro.it

For preprints via ftp or WWW: http://arXiv.org/abs/astro-ph/0310901

A Giant Flare on T Tauri Star Observed at Millimeter Wavelengths

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We have conducted multi-epoch synthesis imaging of λ =2 and 3 millimeter (mm) continuum emission and near infrared K band (2.2 μm) imaging of a flare event in January 2003 that occurred on the young stellar object GMR-A. The object is suggested to be a weak-line T Tauri star in the Orion cluster. Our mm data showed that the flare activity lasted at least over 13 days, whereas the K-band magnitude did not change during this event. In addition, we have succeeded in detecting short time variations of flux on the time scales of 15 minutes. The total energy of the flare is estimated to be $\sim 10^{35-36}$ erg, which makes it one of the most energetic flares reported to date. Comparing the mm continuum luminosities with reported X-ray luminosities, we conclude that the mm flare was similar in nature to solar and other stellar flares. Our results will be a crucial step toward understanding magnetically induced stellar surface activities in T Tauri stars.

Accepted by PASJ

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For preprints via ftp or WWW: http://cfa-www.harvard.edu/~hshinnaga/2520L_03oct23_A4.pdf

Editor's Note: The above abstract is being cross-listed with the Star Formation Newsletter and is included here for those interested in stellar flares.

Solar Abstracts

Improved Data for Solar Flare X-ray Spectral Analysis

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The inclusion of collisional rates for He-like Fe and Ca ions is discussed with reference to the analysis of solar flare Fe XXV and Ca XIX line emission, particularly from the *Yohkoh* Bragg Crystal Spectrometer (BCS). The new data are a slight improvement on calculations presently used in the BCS analysis software in that the discrepancy in the Fe XXV y and z line intensities (observed larger than predicted) is reduced. Values of electron temperature from satellite-to-resonance line ratios are slightly reduced (by up to 1 MK) for a given observed ratio. The new atomic data will be incorporated in the *Yohkoh* BCS databases. The data should also be of interest for the analysis of high-resolution, non-solar spectra expected from the *Constellation-X* and *Astro-E* space missions. A comparison is made of a tokamak S XV spectrum with a synthetic spectrum using atomic data in the existing software and the agreement is found to be good, so validating these data for particularly high-n satellite wavelengths close to the S XV resonance line. An error in a data file used for analyzing BCS Fe XXVI spectra is corrected, so permitting analysis of these spectra. Submitted to A&A *For preprints contact*: phillips@stars.gsfc.nasa.gov

For preprints via ftp or WWW: http://hesperia.gsfc.nasa.gov/ phillips/papers/ (File is flare_temperatures.ps)

The Solar Flare 4–10 keV X-ray Spectrum

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The 4–10 keV solar flare spectrum includes highly excited lines of stripped Ca, Fe, and Ni ions as well as a continuum steeply falling with energy. Groups of lines at $\sim$ 7 keV and $\sim$ 8 keV, observed during flares by the broad-band *RHESSI* spectrometer and called here the Fe-line and Fe/Ni-line features, are formed mostly of Fe lines but with Ni lines contributing to the $\sim$ 8 keV feature. Possible temperature indicators of these line features are discussed – the peak or centroid energies of the Fe-line feature, the line ratio of the Fe-line to the Fe/Ni-line features, and the equivalent width of the Fe-line feature. The equivalent width is by far the most sensitive to temperature. However, results will be confused if, as is commonly believed, the abundance of Fe varies from flare to flare, even during the course of a single flare. With temperature determined from the thermal continuum, the Fe-line feature becomes a diagnostic of the Fe abundance in flare plasmas. These results are of interest for other hot plasmas in coronal ionization equilibrium such as stellar flare plasmas, hot gas in galaxies, and older supernova remnants.

Submitted to ApJ

For preprints contact: phillips@stars.gsfc.nasa.gov

For preprints via ftp or WWW: http://hesperia.gsfc.nasa.gov/ phillips/papers/ (File is flare_4-10kev_sp.ps)

Search for 1–10 Hz Modulations in Coronal Emission with SECIS during the August 11, 1999 Eclipse

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Results of the search of the periodic changes of the 530.3 nm line intensity emitted by selected structures of the solar

corona in the frequency range 1–10 Hz are presented. A set of 12728 images of the section of the solar corona extending from near the north pole to the south-west were taken simultaneously in the 530.3 nm ('green') line and white-light with the Solar Eclipse Coronal Imaging System (SECIS) during the 143-seconds-long totality of the 1999 August 11 solar eclipse observed in Shabla, Bulgaria. The time resolution of the collected data is better than 0.05 s and the pixel size is approximately 4 arcsecs. Using classical Fourier spectral analysis tools, we investigated temporal changes of the local 530.3 nm coronal line brightness in the frequency range 1–10 Hz of thousands of points within the field of view. The various photometric and instrumental effects have been extensively considered. We did not find any indisputable, statistically significant evidence of periodicities in any of the investigated points (at significance level $\alpha = 0.05$ or better).

Accepted by A&A

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A Millennium Scale Sunspot Number Reconstruction: Evidence For an Unusually Active Sun Since the 1940's

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The extension of the sunspot number series backward in time is of considerable interest for dynamo theory, solar, stellar, and climate research. We have used records of the ^{10}Be concentration in polar ice to reconstruct the average sunspot activity level for the period between the year 850 to the present. Our method uses physical models for processes connecting the ^{10}Be concentration with the sunspot number. The reconstruction shows reliably that the period of high solar activity during the last 60 years is unique throughout the past 1150 years. This nearly triples the time interval for which such a statement could be made previously.

Accepted by Phys. Rev. Lett.
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Reconstruction of Solar Activity for the Last Millennium Using ^{10}Be Data

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In a recent paper (Usoskin et al., 2002a), we have reconstructed the concentration of the cosmogenic ^{10}Be isotope in ice cores from the measured sunspot numbers by using physical models for ^{10}Be production in the Earth's atmosphere, cosmic ray transport in the heliosphere, and evolution of the Sun's open magnetic flux. Here we take the opposite route: starting from the ^{10}Be concentration measured in ice cores from Antarctica and Greenland, we invert the models in order to reconstruct the 11-year averaged sunspot numbers since 850 AD. The inversion method is validated by comparing the reconstructed sunspot numbers with the directly observed sunspot record since 1610. The reconstructed sunspot record exhibits a prominent period of about 600 years, in agreement with earlier observations based on cosmogenic isotopes. Also, there is evidence for the century scale Gleissberg cycle and a number of shorter quasi-periodicities whose periods seem to fluctuate in the millennium time scale. This invalidates the earlier extrapolation of multi-harmonic representation of sunspot activity over extended time intervals.

Accepted by A&A

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Penumbral Structure at 0"1 Resolution. I. General Appearance and Power Spectra

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We analyse sunspot filtergrams of unprecedented quality obtained by Scharmer (2002) with the Swedish 1-m Solar Telescope on La Palma. The observations comprise images in three different wavelength bands: 488, 436, and 430 nm (G-band). We find that there are still unresolved penumbral filaments which must have widths smaller than 80 km. The fine structuring along the filaments is limited. Penumbral grains have internal structure and look like they are split or crossed by narrow dark structures. We calculate intensity power spectra of the penumbra from images that are corrected for seeing using the Phase Diversity technique. The effects of high order aberrations that are not corrected for are estimated to be too low to be consistent with a flat power spectrum. The penumbral power spectra do not show any signs of bumps or peaks that could correspond to a preferred scale at 0"35 for the width of penumbral filaments. We argue that the power spectrum is not a very reliable source of information concerning preferred scales.

Accepted by A&A

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The Flares Associated with the Abnormal Rotation Rates of the Bipolar Sunspots : Reconnection Probably Below the Surface

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We use the observations of Kodaikanal observatory white light pictures to study the association between the rotation rates of the bipolar sunspots and triggering of the flares. For the years 1969-1974, we compute daily rotation rates of the leading and the following spots of the bipolar sunspot groups during their life span. We find that either leading or following or both of the bipolar spot groups which have abnormal rotation rates during the course of their evolution are strongly associated with the occurrence of flares in the later stage of their life span. Other important findings are : (i) the abnormal rotation rates and the flares occur during the $50 - 80\,\%$ of their life span of the spot group and , (ii) abnormal rotation rate of about $2^o/day$ is required for triggering the flares. The strong relation between the occurrence of abnormal rotation rates of the sunspot groups and the occurrence of the flares enabled us to estimate the probable region of depth of reconnection below the solar surface.

Accepted by A&A (Letters)

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Ultraviolet Oscillations in the Chromosphere of the Quiet Sun

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Quiet-Sun oscillations in the four *TRACE* ultraviolet passbands centred on 1700 Å, 1600 Å, 1216 Å and 1550 Å are studied using a wavelet-based technique. Both network and internetwork regions show oscillations with a variety of periods and lifetimes in all passbands. The most frequent network oscillation has a period of 283 s with a lifetime of 2–3 cycles in all passbands. These oscillations are discussed in terms of upwardly-propagating magnetohydrodynamic wave models. The most frequent internetwork oscillation has a period of 252 s, again with a lifetime of 2–3 cycles, in all passbands. The tendency for these oscillations to recur in the same position is discussed in terms of 'persistent flashers'. The network contains greater oscillatory power than the internetwork at periods longer than 300 s in the low chromosphere. This value is shown to decrease to 250 s in the high chromosphere. The internetwork also displays

a larger number of short-lifetime, long-period oscillations than the network, especially in the low chromosphere. Both network and internetwork regions contain a small number of non-recurring long-lifetime oscillations.

Accepted by ApJ

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For preprints via WWW: http://star.pst.qub.ac.uk/∼jma/publications.html

Low Mass and Substellar Abstracts

The CORALIE Survey for Southern Extra-solar Planets. XII. Orbital Solutions for 16 Extra-solar Planets Discovered with CORALIE

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This paper summarizes the information gathered for 16 still unpublished exoplanet candidates discovered with the CORALIE echelle spectrograph mounted on the Euler Swiss telescope at La Silla Observatory. Amongst these new candidates, 10 are typical extrasolar Jupiter-like planets on intermediate- or long-period ($100 < P \leq 1350$ d) and fairly eccentric ($0.2 \leq e \leq 0.5$) orbits (HD 19994, HD 65216, HD 92788, HD 111232, HD 114386, HD 142415, HD 147513, HD 196050, HD 216437, HD 216770). Two of these stars are in binary systems. The next 3 candidates are shorter-period planets (HD 6434, HD 121504) with lower eccentricities among which a hot Jupiter (HD 83443). More interesting cases are finally given by the multiple-planet systems HD 82943 and HD 169830. The former is a resonant $P_2/P_1 = 2/1$ system in which planet-planet interactions are influencing the system evolution. The latter is more hierarchically structured.

Accepted by A&A

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Spectroscopic Identification of DENIS-selected Brown Dwarf Candidates in the Upper Scorpius OB Association

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We present low-resolution (R=900) optical (576.1–1,051.1 nm) spectroscopic observations of 40 candidate very low-mass members in the Upper Scorpius OB association. These objects were selected using the I, J and K photometry available in the DENIS database. We have derived spectral types and we have measured Hα and NaI doublet (at 818.3 and 819.5 nm) equivalent widths. We assess the youth of the objects by comparing them to their older counterparts of similar spectral type in the Pleiades cluster and the field. Our analysis indicates that 28 of our targets are young very low-mass objects, and thus they are strong candidate members of the OB association. The other 12 DENIS sources are foreground M dwarfs or background red giants. Our sample of spectroscopic candidate members includes 18 objects with spectral types in the range M6.5 and M9, which are likely young brown dwarfs. We classify these candidates as accreting/non accreting using the scheme proposed by Barrado y Navascués & Martín (2003). We find 5 substellar-mass candidate cluster members that are still undergoing mass accretion, indicating that the timescale for accretion onto brown dwarfs can be as long as 5 Myr in some cases.

Accepted by AJ (to appear January 2004)

For preprints contact: ege@ll.iac.es

For preprints via ftp or WWW: http://arXiv.org/abs/astro-ph/0310819

JOB OPENING

Postdoctoral Fellowship
Solar Physics
Armagh Observatory (N. Ireland)

Applications are invited for a short-term postdoctoral research assistantship in Solar Physics to be held at *Armagh Observatory* beginning January 2004 or as soon as possible thereafter. The PDRA's work activities will be directed towards reduction/interpretation of SoHO/SUMER data relating to bi-directional jets. A knowledge of SUMER data reduction and spectroscopy is essential.

Further information about Armagh Observatory, and in particular the current Solar Physics research programme, may be obtained by consulting the Observatory's web-site (http://star.arm.ac.uk) and in particular the preprint WEB page or via email to Gerry Doyle (jgd@star.arm.ac.uk). This position is funded by the Programme for Research in Irish Third Level Institutions under the National Development Plan.

The closing date for applications is 14 November 2003. Armagh Observatory have an excellent in-house computing facility plus access to super-computing facilities via the Irish Grid. Prospective applicants should obtain an application pack from the Administrator or it may be downloaded from http://star.arm.ac.uk/~jgd/outgoing/JOB/. The completed application form, together with a full curriculum vitae and bibliography should be sent to: The Administrator, Armagh Observatory, College Hill, Armagh BT61 9DG, N. Ireland. [Tel. +44-(0)28-3752-2928, Fax. +44-(0)28-3752-7174, email lfy@star.arm.ac.uk]. Applicants are asked to ensure that references from three referees should also reach the Administrator by the same date.

JOB OPENING

Postdoctoral Fellowship
Solar-Type Stars
NOAO/NSO (Tucson, Arizona)

The NOAO/NSO invites applications for a postdoctoral research associate to work with Mark Giampapa on an observational investigation of the joint variation of chromospheric/coronal activity and luminosity changes in solar-type stars. The program will include the delineation of the evolution of activity and associated irradiance variability through the investigation of solar-type stars in selected open clusters as well as in the field. The results will address the broader goal of characterizing the ambient radiative environments of young solar systems as their planetary atmospheres form and evolve. In addition, the successful candidate will investigate the feasibility of utilizing the automated photometric facilities in this program for the detection of photometric transits of extrasolar planets. Applicants with experience in the acquisition and analysis of spectroscopic and photometric data are particularly encouraged to apply. Specific responsibilities will include obtaining spectroscopic observations at ground-based telescopes on a regular (monthly) basis in addition to the reduction and analysis of photometric data from an automated telescope system operated by GNAT, Inc. (Global Network of Automated Telescopes).

The postdoc will be a member of LAPLACE (Life And PLanets Astrobiology CEnter), a partnership between the University of Arizona and NOAO, and a newly created node of NASA's Astrobiology Institute. The research interests of current LAPLACE members include solar-stellar astrophysics, star and planet formation, the detection and characterization of extra-solar planetary systems, and the emergence and evolution of life in the Universe. LAPLACE is expected to create an exciting interdisciplinary atmosphere with many opportunities for interaction among Center members (see http://caao.as.arizona.edu/laplace).

Applicants should have obtained by the starting date a Ph.D. in astronomy or a related field. The appointment is for 3 years with a possible extension to additional years. The location of the position is at the Tucson offices of the NSO and NOAO, on the campus of the University of Arizona. Interested applicants are asked to submit by January 15, 2004, a CV, list of publications, and a statement of current and future research interests to the address below. Please also arrange to have three letters of reference sent to the same address. Questions regarding this position are welcome and may be directed to Mark Giampapa at 520-318-8236 or giampapa@noao.edu.

Send resume to: Human Resources Manager National Optical Astronomy Observatory National Solar Observatory P.O. Box 26732 Tucson, Arizona 85726-6732 Email: hrnoao@noao.edu FAX: 520-318-8560

NOAO and NSO are affirmative action and equal employment opportunity employers. Preference granted to qualified Native Americans living on or near the Tohono O'odham reservation. Women and underrepresented minorities are particularly encouraged to apply.

Ph.D. Studentship

Ph.D. Student Thesis Project Opening
Wind Models of AGB Stars
Institute for Astronomy (Leuven, Belgium)

Background

The late stages of stellar evolution of low- and intermediate-mass stars on the Asymptotic Giant Branch (AGB) are characterized by prodigious mass loss via a molecular, dusty wind. Understanding this wind, its chemistry and its time variation is one of the challenges of present-day AGB research. Recent observational studies of the mass loss history of AGB stars using both dust and gas give puzzling results, that suggest that the structure of these winds is not understood. Infrared and sub-millimeter sprectroscopy has the potential to resolve the wind structure of AGB stars.

The project

The purpose is to develop and apply detailed physical and chemical models of the winds of AGB stars with the goal to derive reliable diagnostics of their infrared and sub-millimeter spectra to determine mass loss rates and their time variation.

In the institute, expertise is available with model atmosphere codes for red giants, existing codes for the treatment of circumstellar molecular layers, and a detailed dust spectrum code. The new developments to be incorporated will concern the treatment of turbulence and, in particular, properly calculated radiative transfer for the many overlapping lines of molecules as H_2O and CO_2.

Observational data obtained with the James Clerk Maxwell submm Telescope and with the Infrared Space Observatory are available. The project also serves as a preparation of the institute's involvement of the guaranteed-time programmes with the Herschel satellite.

The position

The research will be conducted at the Institute for Astronomy of Leuven University, Belgium. The initial contract is for two years, starting January 1, 2004. Extension of the contract, in Leuven or in Amsterdam, The Netherlands, with two more years is likely. The standard salary for PhD research in Belgium is offered.

The candidate must have a foundation in (astro)physics. Experience with numerical methods is an advantage. Applications are due before November 15, 2003.

Interested?

Send your CV to Christoffel Waelkens (christoffel@ster.kuleuven.ac.be)

Instituut voor Sterrenkunde, Celestijnenlaan 200B, B-3001 Leuven, Belgium

Ph.D. Studentship

Curry Graduate Fellowship in Astrophysics

Dept. of Physics and Astronomy
Clemson University (S. Carolina)

We invite applications from well-prepared and motivated students for endowed Curry Fellowships. These competitive awards facilitate graduate study in astrophysics at Clemson by bringing total stipend support to at least $20,000 in addition to a full tuition waiver. Clemson, nestled in the foothills of the Blue Ridge Mountains 1.5 hours north of Atlanta is the forefront research university in South Carolina. Our 6-member astronomy faculty is active in research areas including stellar evolution, Galactic populations, nucleosynthesis, cosmochemistry, gamma-ray bursts, cosmology, supernovae, and high-energy astrophysics. Students and faculty are engaged in vigorous theoretical and observational research programs, many of which employ national and international collaborations as well as use of world-class ground- and space-based telescopes. Clemson also offers access to the SARA 0.9m telescope at KPNO. Our faculty is active in the astronomical community, has established a solid funding record, and is continuing efforts to increase external funding for student support. Curry Fellows will benefit from a joint astrophysics initiative between Clemson and the University of Alabama in Huntsville that includes visiting scientist exchanges, reciprocal seminars, and research collaborations. Information about the Curry Fellowships can be found at

http://people.clemson.edu/ lmark/curry.html

Because significant sources of enhanced support in addition to these Fellowships may exist, we welcome applications from all students interested in the opportunities our program provides. We are delighted to answer inquiries about our graduate program and the Curry Fellowships. These may be directed to Prof. Jeremy King (jking2@clemson.edu; 864-656-4275). Graduate program application information can be found on our Department website

http://physicsnt.clemson.edu

Announcement

Conference Proceedings

THE FUTURE OF COOL-STAR ASTROPHYSICS

Editors: A. Brown, G. M. Harper, & T. R. Ayres.

Proceedings of 12th Cambridge Workshop on Cool Stars, Stellar Systems, and the Sun, held July 30 - August 3, 2001 at University of Colorado, Boulder, Colorado, USA

The on-line electronic proceedings from this workshop is now available at http://origins.colorado.edu/cs12/

The proceedings contains all the papers, both oral and poster, presented at the workshop, including the following review papers:

- The Solar-Stellar Connection: An Overview – Andrea Dupree
- The Sun: The First 4.6 Gyr – Fred Walter
- An Insider's View of Brown Dwarfs – Suzanne Hawley
- An Outsiders View of Extrasolar Planets – Suzanne Hawley, I. Neill Reid
- The Sun As A Guide To The Stars – Philip Judge
- Modeling Atmospheric Activity of Cool Stars – Karel Schrijver
- Future Capabilities for Solar/Stellar Observations – Ken Carpenter et al.
- Summary of the Twelfth Cool Stars Workshop: Insights, Mysteries, and Action Items – Jeff Linsky

The proceedings will also be made available on CD in the near future.

Abstract Guidelines

Abstracts for *COOLNEWS* are solicited for papers that have been recently accepted by or submitted to refereed journals, and for recent Ph.D. theses. Abstracts for conference proceedings articles are *not* posted in *COOLNEWS*. The subject matter should pertain directly to cool stars (spectral types F,G,K,M or L), substellar objects, or the sun. Both theoretical and observational abstracts are appropriate.

Abstracts dealing with cool pre-main-sequence (PMS) stars will generally not be included in *COOLNEWS*, since they are already covered by the *Star Formation Newsletter*. Exceptions to this rule will be considered if the subject matter is truly cross-disciplinary. If you wish to submit a cross-disciplinary abstract on PMS stars, then first submit it to the *Star Formation Newsletter*. After doing so, submit the abstract to *COOLNEWS* accompanied by a short e-mail stating that it has already been submitted to the *Star Formation Newsletter*, and summarizing why it will be of interest to the cool star/solar community at large.

A monthly call for abstracts will be issued and abstracts received by the last day of the month will usually appear in the following month's newsletter. Announcements of general interest to the cool star and solar communities may also be submitted for posting in the newsletter. These might include (but are not restricted to) the following: (i) *Job Openings* directed toward cool star or solar researchers, (ii) announcements of *Upcoming Meetings*, (iii) announcements of *Upcoming Observing Campaigns* for which participation is solicited from the community at large, (iv) reviews of *New Books*, and (v) *General Announcements* that provide or request research-related information. Please send all correspondence to the editor at coolnews@jila.colorado.edu. Abstract templates and back issues can be obtained from the COOLNEWS Web-page at

`http://casa.colorado.edu/~skinners/coolnews.html` .

*** Please send abstracts in the body of the message and *not* as attachments.***