THE AGB NEWSLETTER

An electronic publication dedicated to Asymptotic Giant Branch stars and related phenomena

Official publication of the IAU Working Group on Abundances in Red Giants

No. 200 — 2 March 2014

http://www.astro.keele.ac.uk/AGBnews

Editors: Jacco van Loon and Albert Zijlstra

Editorial

Dear Colleagues,

It is our pleasure to present you the 200$^{\rm th}$ issue of the AGB Newsletter. One could consider this a milestone, or just another number no different from any other. Indeed, research on AGB stars continues unabated. (As do the perils of life, hence the slight delay in getting the newsletter out.) Still, to mark the occasion we invited your thoughts as to what are the research priorities for the upcoming 100 months, in AGB stars research.

Steve Shore offered the following questions to pursue: "(1) so far only one known symbiotic has displayed a classical nova explosion (V407 Cyg) and there was no particular reason for expecting this system to behave so antisocially. Why this one? What does it say about the population of such systems among the symbiotics? (2) what do the results for dust in AGB stars imply for the abundances of multiple populations in globular clusters?"

Thomas Posch wondered: "What is the driving mechanism of winds in oxygen-rich AGB stars? The background is the relative lack of opacity around 1 μm wavelength in the probably Fe-poor – and certainly not C-rich – dust species forming around oxygen-rich AGB stars, which leads to a great difficulty in generating radiation pressure on the respective dust grains."

An anonymous loyal reader sent us a similar plea: "In my opinion one of the pressing issues in AGB research for the next 100 months (and probably beyond that) is the understanding of mass loss from oxygen-rich stars, and at low luminosities. Two recent works that I think lead the way forward are that of Bladh et al. (2013, A&A 553, A20) and Groenewegen (2014, A&A 561, L11). It will be of pivotal importance to improve the understanding of mass loss in order to improve current stellar evolution models (which currently only use an approximate parametrisation of mass loss) and everything connected to them."

And Sakib Rasool proposed: "The primary issue to solve is finding out the exact combination of processes that give cosmic butterflies their wings."

We are convinced there are many other important questions to be answered; feel welcome to keep sending us your contributions, making the newsletter a forum for discussion and inspiration.

The second announcement of the 3$^{\rm rd}$ Vienna meeting is out; there is an interesting session being organised at the UK National Astronomy Meeting; and the Fizeau interferometry exchange programme continues. And if you are looking for a tenured position then here's a fantastic opportunity in Uppsala.

The next issue is planned to be distributed around the 1$^{\rm st}$ of April.

Editorially Yours,
Jacco van Loon, Ambra Nanni and Albert Zijlstra

Food for Thought

This month's thought-provoking statement is:

How important is multiplicity in shaping the AGB stellar population characteristics and yields?

Reactions to this statement or suggestions for next month's statement can be e-mailed to agbnews@astro.keele.ac.uk (please state whether you wish to remain anonymous)

Refereed Journal Papers

Identification of new Galactic symbiotic stars with SALT. I. Initial discoveries and other emission line objects

Brent Miszalski[1,2] *and Joanna Mikołajewska*[3]

[1]South African Astronomical Observatory, P.O. Box 9, Observatory, 7935, South Africa

[2]Southern African Large Telescope Foundation, P.O. Box 9, Observatory, 7935, South Africa

[3]Nicolaus Copernicus Astronomical Centre, Bartycka 18, 00716 Warsaw, Poland

We introduce the first results from an ongoing, systematic survey for new symbiotic stars selected from the AAO/UKST SuperCOSMOS Hα Survey (SHS). The survey aims to identify and characterise the fainter population of symbiotic stars underrepresented in extant catalogues. The accreting white dwarfs (WDs) in symbiotic stars, fuelled by their red giant donors with high mass loss rate winds, make them promising candidates for type Ia supernovæ. Several candidates were observed spectroscopically with the Southern African Large Telescope (SALT). A total of 12 bona-fide and 3 possible symbiotic stars were identified. The most remarkable example is a rare carbon-rich symbiotic star that displays coronal [Fe X] λ6375 emission, suggesting it may be a supersoft X-ray source with a massive WD. Several other emission line objects with near-infrared colours similar to symbiotic stars are listed in an appendix, including 6 B[e] stars, 4 planetary nebulæ (PNe), 2 possible Be stars, one [WC9] Wolf–Rayet (WR) central star of a PN and one WC9 WR star. These initial discoveries will help shape and refine the candidate selection criteria that we expect will uncover several more symbiotic stars as the survey progresses.

Accepted for publication in MNRAS
Available from arXiv:1311.0797

Modelling the alumina abundance of oxygen-rich evolved stars in the Large Magellanic Cloud

O.C. Jones[1]*, F. Kemper*[2]*, S. Srinivasan*[2]*, I. McDonald*[1]*, G.C. Sloan*[3] *and A.A. Zijlstra*[1]

[1]Jodrell Bank Centre for Astrophysics, The University of Manchester, UK

[2]Institute of Astronomy and Astrophysics, Academia Sinica, Taiwan

[3]Department of Astronomy, Cornell University, New Zealand

In order to determine the composition of the dust in the circumstellar envelopes of oxygen-rich asymptotic giant branch (AGB) stars we have computed a grid of MODUST radiative-transfer models for a range of dust compositions, mass-loss rates, dust shell inner radii and stellar parameters. We compare the resulting colours with the observed oxygen-rich AGB stars from the SAGE-Spec Large Magellanic Cloud (LMC) sample, finding good overall agreement

for stars with a mid-infrared excess. We use these models to fit a sample of 37 O-rich AGB stars in the LMC with optically thin circumstellar envelopes, for which 5–35-μm *Spitzer* infrared spectrograph (IRS) spectra and broadband photometry from the optical to the mid-infrared are available. From the modelling, we find mass-loss rates in the range $\sim 8 \times 10^{-8}$ to 5×10^{-6} $M_{\odot}$ yr^{-1}, and we show that a grain mixture consisting primarily of amorphous silicates, with contributions from amorphous alumina and metallic iron provides a good fit to the observed spectra. Furthermore, we show from dust models that the *AKARI* [11]–[15] versus [3.2]–[7] colour–colour diagram, is able to determine the fractional abundance of alumina in O-rich AGB stars.

Accepted for publication in MNRAS
Available from arXiv:1402.2485

A new HCN maser in IRAS 15082−4808

Christina L. Smith[1], *Albert A. Zijlstra*[1] *and Gary A. Fuller*[1]

[1]Jodrell Bank Centre for Astrophysics, The University of Manchester, UK

We have identified a new vibrational HCN maser at 89.087 GHz in the asymptotic giant branch (AGB) star IRAS 15082−4808, a maser which is thought to trace the innermost region of an AGB envelope. The observations of this maser at three epochs are presented: two positive detections and one null detection. The line profile has varied between the positive detections, as has the intensity of the maser. The major component of the maser is found to be offset by -2.0 ± 0.9 km s^{-1} with respect to the systemic velocity of the envelope, as derived from the 88.631 GHz transition of HCN. Similar blueshifts are measured in the other 9 sources where this maser has been detected. Maser variability with pulsation phase has been investigated for the first time using the 10 stars now available. Comparisons with AGB model atmospheres constrain the position of the formation region of the maser to the region between the pulsation shocks and the onset of dust acceleration, between 2 and 4 stellar radii.

Accepted for publication in MNRAS
Available from arXiv:1402.2895

The lead discrepancy in intrinsically *s*-process enriched post-AGB stars in the Magellanic Clouds

K. De Smedt[1], *H. Van Winckel*[1], *D. Kamath*[1], *A.I. Karakas*[2], *L. Siess*[3], *S. Goriely*[3] *and P. Wood*[2]

[1]Instituut voor Sterrenkunde, K.U. Leuven, Celestijnenlaan 200B, B-3001 Leuven, Belgium

[2]Research School of Astronomy and Astrophysics, Mount Stromlo Observatory, Weston Creek ACT 2611, Australia

[3]Institut d'Astronomie et d'Astrophysique, Université Libre de Bruxelles, ULB, CP 226, 1050 Brussels, Belgium

Context: Our understanding of the *s*-process nucleosynthesis in asymptotic giant branch (AGB) stars is incomplete. AGB models predict, for example, large overabundances of lead (Pb) compared to other *s*-process elements in metal-poor low-mass AGB stars. This is indeed observed in some extrinsically enhanced metal-poor stars, but not in all. An extensive study of intrinsically *s*-process enriched objects is essential for improving our knowledge of the AGB third dredge-up and associated *s*-process nucleosynthesis.
Aims: We compare the spectral abundance analysis of the SMC post-AGB star J004441.04−732136.4 with state-of-the-art AGB model predictions with a main focus on Pb. The low S/N in the Pb line region made the result of our previous study inconclusive. We acquired additional data covering the region of the strongest Pb line.
Methods: By carefully complementing re-reduced previous data, with newly acquired UVES optical spectra, we improve the S/N of the spectrum around the strongest Pb line. Therefore, an upper limit for the Pb abundance is estimated from a merged weighted mean spectrum using synthetic spectral modeling. We then compare the abundance results

from the combined spectra to predictions of tailored AGB evolutionary models from two independent evolution codes. In addition, we determine upper limits for Pb abundances for three previously studied LMC post-AGB objects.
Results: Although theoretical predictions for J004441.04−732136.4 match the *s*-process distribution up to tungsten (W), the predicted very high Pb abundance is clearly not detected. The three additional LMC post-AGB stars show a similar lack of a very high Pb abundance.
Conclusion: From our study, we conclude that none of these low-mass, low-metallicity post-AGB stars of the LMC and SMC are strong Pb producers. This conflicts with current theoretical predictions.

Accepted for publication in A&A
Available from arXiv:1402.3169

Optically visible post-AGB/RGB stars and young stellar objects in the Small Magellanic Cloud: candidate selection, spectral energy distributions and spectroscopic examination

D. Kamath[1,2]*, P.R. Wood*[1] *and H. Van Winckel*[2]

[1]Research School of Astronomy and Astrophysics, Mount Stromlo Observatory, Weston Creek, ACT 2611, Australia
[2]Instituut voor Sterrenkunde, K.U.Leuven, Celestijnenlaan 200D bus 2401, B-3001 Leuven, Belgium

We have carried out a search for optically visible post-AGB candidates in the Small Magellanic Cloud (SMC). Firstly, we used mid-IR observations from the *Spitzer* Space Telescope to select optically visible candidates with excess mid-IR flux and then we obtained low-resolution optical spectra for 801 of the candidates. After removing poor quality spectra and contaminants such as M-stars, C-stars, planetary nebulæ, quasi-stellar objects and background galaxies, we ended up with a final sample of 63 high probability post-AGB/RGB candidates of A–F spectral type. From the spectral observations, we estimated the stellar parameters: effective temperature ($T_{\rm eff}$), surface gravity ($\log g$), and metallicity ([Fe/H]). We also estimated the reddening and deduced the luminosity using the stellar parameters combined with photometry. For the post-AGB/RGB candidates, we found that the metallicity distribution peaks at [Fe/H] ≈ -1.00 dex. Based on a luminosity criterion, 42 of these 63 sources were classified as post-RGB candidates and the remaining 21 as post-AGB candidates. From the spectral energy distributions we were able to infer that 6 of the 63 post-AGB/RGB candidates have a surrounding circumstellar shell suggesting that they are single stars, while 27 of the post-AGB/RGB candidates have a surrounding disc, suggesting that they lie in binary systems. For the remaining 30 post-AGB/RGB candidates the nature of the circumstellar environment was unclear. Variability is displayed by 38 of the 63 post-AGB/RGB candidates with the most common variability types being the Population II Cepheids (including RV Tauri stars) and semi-regular variables. This study has also revealed a new RV Tauri star in the SMC, J005107.19−734133.3, which shows signs of *s*-process enrichment. From the numbers of post-AGB/RGB stars in the SMC, we were able to estimate evolutionary rates. We find that the number of post-AGB and post-RGB candidates that we have identified are in good agreement with the stellar evolution models with some mass loss in the post-AGB phase and a small amount of re-accretion in the lower luminosity post-RGB phase. This study also resulted in a new sample of 40 young stellar objects (YSOs) of A–F spectral type. The 40 YSO candidates for which we could estimate stellar parameters are luminous and of high mass ($\sim$ 3–10 $M_{\odot}$). They lie on the cool side of the usually adopted birthline in the HR diagram. This line separates visually obscured protostars from optically visible pre-main sequence stars, meaning that our YSO candidates have become optically visible in the region of the HR diagram usually reserved for obscured protostars. Additionally, we also identified a group of 63 objects whose spectra are dominated by emission lines and in some cases, a significant UV continuum. These objects are very likely to be either hot post-AGB/RGB candidates or luminous YSOs.

Published in MNRAS
Available from arXiv:1402.5954

The Celestial Buffet: multiple populations and globular cluster formation in dwarf galaxies

Aaron J. Maxwell[1], *James Wadsley*[1], *H.M.P. Couchman*[1] *and Alison Sills*[1]

[1]Department of Physics & Astronomy, McMaster University, Canada

We present a framework that explains the commonly observed variation in light element abundances in globular clusters. If globular clusters form in the centres of dwarf galaxies, they will be pumped on to larger orbits as star formation progresses. The potential well will only retain the moderate velocity asymptotic giant branch (AGB) ejecta, the expected source of enrichment, but not supernova ejecta. There is no need to increase the initial cluster mass, a requirement of self-enrichment scenarios, as all the stars within the dwarf can contribute. As the clusters move through the dwarf centre they sweep up a mix of AGB ejecta and in-falling pristine gas to form a second generation of stars. The specific mix will vary in time and is thus able to explain the spread in second generation abundances observed in different clusters. The globular clusters will survive to the present day or be stripped as part of the hierarchical merging process of larger galaxies. We illustrate how this process may operate using a high-resolution simulation of a dwarf galaxy at high redshift.

Accepted for publication in MNRAS
Available from arXiv:1401.7653

Nucleation and stabilization of carbon-rich structures in interstellar media

N. Patra[1,2], *P. Kral*[2] *and H.R. Sadeghpour*[1]

[1]ITAMP, Harvard-Smithsonian CfA, USA
[2]Dept. of Chemistry, UIC, Chicago, USA

We study conditions under which carbon clusters of different sizes form and stabilize. We describe an approach to equilibrium by simulating tenuous carbon gas dynamics to long times. First, we use reactive molecular dynamics simulations to describe the nucleation of long chains, large clusters, and complex cage structures in carbon and hydrogen rich interstellar gas phases. We study how temperature, particle density, presence of hydrogen, and carbon inflow affect the nucleation of molecular moieties with different characteristics, in accordance with astrophysical conditions. We extend the simulations to densities which are orders of magnitude lower than current laboratory densities, to temperatures relevant to circumstellar environments of planetary nebulæ, and to longtime (microsecond) formation timescales. We correlate cluster size distributions from dynamical simulations with thermodynamic equilibrium intuitions, where at low temperatures and gas densities, entropy plays a significant role.

Accepted for publication in Astrophysical Journal
Available from arXiv:1402.0534

Roche-lobe filling factor of mass-transferring red giants: the PIONIER view

Henri M.J. Boffin[1], *M. Hillen*[2], *J.P. Berger*[1], *A. Jorissen*[3], *N. Blind*[4], *J.B. Le Bouquin*[5], *J. Mikołajewska*[6] *and B. Lazareff*[5]

[1]European Southern Observatory, Chile
[2]Instituut voor Sterrenkunde, K.U. Leuven, Belgium
[3]Institut d'Astronomie et d'Astrophysique, Université Libre de Bruxelles, Belgium
[4]Max Planck Institute for Extraterrestrial Physics, Garching, Germany
[5]UJF–Grenoble 1/CNRS–INSU, Institut de Planétologie et d'Astrophysique de Grenoble (IPAG) UMR 5274, Grenoble, France
[6]Copernicus Astronomical Center, Warsaw, Poland

Using the PIONIER visitor instrument that combines the light of the four Auxiliary Telescopes of ESO's Very

Large Telescope Interferometer, we precisely measure the diameters of several symbiotic and related stars: HD 352, HD 190658, V1261 Ori, ER Del, FG Ser, and AG Peg. These diameters – in the range of 0.6–2.3 milli-arcseconds – are used to assess the filling factor of the Roche lobe of the mass-losing giants and provide indications on the nature of the ongoing mass transfer. We also provide the first spectroscopic orbit of ER Del, based on CORAVEL and HERMES/Mercator observations. The system is found to have an eccentric orbit with a period of 5.7 years. In the case of the symbiotic star FG Ser, we find that the diameter changes by 13% over the course of 41 days, while the observations of HD 352 are indicative of an elongation. Both these stars are found to have a Roche filling factor close to 1, as is most likely the case for HD 190658 as well, while the three other stars have factors below 0.5–0.6. Our observations reveal the power of interferometry for the study of interacting binary stars; the main limitation in our conclusions is the poorly known distances of the objects.

Accepted for publication in A&A
Available from arXiv:1402.1798
and from http://dx.doi.org/10.1051/0004-6361/201323194

Nucleosynthesis in helium-enriched asymptotic giant branch models: Implications for heavy element enrichment in ω Centauri

Amanda I. Karakas[1], *Anna F. Marino*[1] *and David M. Nataf*[1]

[1]Research School of Astronomy and Astrophysics, Australian National University, Canberra, ACT 2611, Australia

We investigate the effect of helium enrichment on the evolution and nucleosynthesis of low-mass asymptotic giant branch (AGB) stars of 1.7 $M_\odot$ and 2.36 $M_\odot$ with a metallicity of $Z = 0.0006$ ([Fe/H] ≈ -1.4). We calculate evolutionary sequences with the primordial helium abundance ($Y = 0.24$) and with helium-enriched compositions ($Y = 0.30$, 0.35, 0.40). For comparison we calculate models of the same mass but at a lower metallicity $Z = 0.0003$ ([Fe/H] ≈ -1.8) with $Y = 0.24$. Post-processing nucleosynthesis calculations are performed on each of the evolutionary sequences to determine the production of elements from hydrogen through to bismuth. Elemental surface abundance predictions and stellar yields are presented for each model. The models with enriched helium have shorter main sequence and AGB lifetimes, and enter the AGB with a more massive hydrogen exhausted core than the primordial helium model. The main consequences are 1) low-mass AGB models with enhanced helium will evolve more than twice as fast, giving them the chance to contribute sooner to the chemical evolution of the forming globular clusters, and 2) the stellar yields will be strongly reduced relative to their primordial helium counterparts. An increase of $\Delta Y = 0.10$ at a given mass decreases the yields of carbon by up to $\approx 60\%$, of fluorine by up to 80%, and decreases the yields of the *s*-process elements barium and lanthanum by $\approx 45\%$. While the yields of first *s*-process peak elements strontium, yttrium and zirconium decrease by up to 50%, the yields of rubidium either do not change or increase.

Accepted for publication in The Astrophysical Journal
Available from arXiv:1401.7479

Discovery of new low-excitation planetary nebulæ

Chih-Hao Hsia[1] *and Yong Zhang*[1]

[1]Department of Physics, University of Hong Kong, Pokfulam Road, Hong Kong, China

We report a multi-wavelength study of four new planetary nebula (PN) candidates selected from the INT/WFC Photometric Hα Survey of the Northern Galactic Plane (IPHAS) and Deep Sky Hunter (DSH) catalogues. We present mid-resolution optical spectra of these PNs. The PN status of our sample was confirmed by optical narrow-band images and mid-resolution spectra. Based on the locations of these objects in the log(Hα/[N II]) versus log(Hα/[S II]) diagnostic diagram, we conclude that these sources are evolved lowexcitation PNs. The optical and infrared appearances of these

newly discovered PNs are discussed. Three of the new nebulæ studied here are detected in infrared and have low infrared-to-radio flux ratios, probably suggesting that they are evolved. Furthermore, we derive the dynamical ages and distances of these nebulæ and study the spectral energy distribution for one of them with extensive infrared archival data.

Accepted for publication in Astronomy & Astrophysics
Available from arXiv:1402.2369

A search for long-period variables in globular clusters: M 22 and IC 4499

Anand Sahay[1], *Thomas Lebzelter*[2] *and Peter Wood*[3]

[1]Department of Applied Physics, Indian School of Mines, Dhanbad, India
[2]University of Vienna, Department of Astrophysics, Vienna, Austria
[3]RSAA, Australian National University, Canberra, Australia

We report on the results of a long time photometric monitoring of two metal-poor Galactic globular clusters, M 22 and IC 4499, searching for long-period variables (LPVs) on the upper giant branch.We detected 22 new LPVs in the field of M 22 and confirmed the variability of six known variables. Periods could be determined for 16 of them. In the field of IC 4499 we detected and characterised two new LPVs. Cluster membership is evaluated for all the variables based on photometry and literature data, and the location of the stars in log P–K diagram is discussed. Our findings give further support to the presence of LPVs at metallicities as low as [Fe/H] = −1.7. The luminosity range where LPVs are found in metal-poor clusters is lower than in more metal-rich clusters.

Published in Publications of the Astronomical Society of Australia
Available from arXiv:1401.3755

A sequence of nitrogen-rich very red giants in the globular cluster NGC 1851

Eugenio Carretta[1], *Valentina D'Orazi*[2,3], *Raffaele G. Gratton*[4] *and Sara Lucatello*[4]

[1]INAF–Osservatorio Astronomico di Bologna, Italy
[2]Dept. of Physics and Astronomy, Macquarie University, Sydney, Australia
[3]Monash Centre for Astrophysics, School of Mathematical Sciences, Monash University, Australia
[4]INAF–Osservatorio Astronomico di Padova, Italy

We present the abundances of N in a sample of 62 stars on the red giant branch (RGB) in the peculiar globular cluster NGC 1851. The values of [N/Fe] ratio were obtained by comparing the flux measured in the observed spectra with that from synthetic spectra for up to about 15 features of CN. This is the first time that N abundances are obtained for such a large sample of RGB stars from medium-resolution spectroscopy in this cluster. With these abundances, we provide chemical tagging of the split RGB found from several studies in NGC 1851. The secondary reddest sequence on the RGB is populated almost exclusively by N-rich stars, confirming our previous suggestion based on Strömgren magnitudes and colours. These giants are also, on average, enriched in s-process elements such as Ba, and are likely the results of pollution from low-mass stars that experienced episodes of third dredge-up in the asymptotic giant branch phase.

Published in Astronomy and Astrophysics
Available from http://dx.doi.org/10.1051/0004-6361/201323023

Multiwavelength modelling the SED of supersoft X-ray sources. II. RS Ophiuchi: From the explosion to the SSS phase

A. Skopal[1]

[1]Astronomical Institute, Slovak Academy of Sciences, 059 60 Tatranská Lomnica, Slovakia

RS Oph is a recurrent symbiotic nova that undergoes nova-like outbursts on a time scale of 20 years. Its two last eruptions (1985 and 2006) were subject of intensive multiwavelengths observational campaign from the X-rays to the radio. This contribution aims to determine physical parameters and the ionization structure of the nova from its explosion to the first emergence of the supersoft X-rays (day 26) by using the method of multiwavelength modelling the SED. From the very beginning of the eruption, the model SED revealed the presence of both a strong stellar and nebular component of radiation in the spectrum. During the first 4 days, the nova evinced a biconical ionization structure. The $\sim$ 8200 K warm and 160–200 $R_\odot$ extended pseudo-photosphere encompassed the white dwarf (WD) around its equator to the latitude $> 40°$. The remaining space around the WD's poles was ionized, producing a strong nebular continuum with the emission measure $EM \sim 2.3 \times 10^{62}$ cm^{-3} via the fast wind from the WD. The luminosity of the burning WD was highly super-Eddington for the whole investigated period. The wind mass loss at rates of 10^{-4}–10^{-5} $M_\odot$ yr^{-1} and the presence of jets suggest an accretion throughout a disk at a high rate, which can help to sustain the super-Eddington luminosity of the accretor for a long time.

Accepted for publication in New Astronomy
Available from arXiv:1402.6126

Job Advert

Department of Physics and Astronomy, Uppsala University, Sweden
Senior Lecturer in Astronomy with specialization in Numerical Astrophysics

Duties: The position includes teaching, research and administration. Teaching duties include course responsibility, course administration and supervision of second- and third-cycle students. In particular, the senior lecturer is expected to teach astrophysics courses at all levels where the development of numerical simulations is an essential part, as well as basic physics courses. Research at the Division for Astronomy and Space Physics combines the continuous development of both advanced instrumentation and astrophysical numerical models, and it is expected that the holder of the position will contribute to the integration of theoretical and observational activities.

Research Expertise and Teaching Expertise: The ranking of eligible applicants will be based primarily on research and teaching expertise, which will be given equal importance. In assessing research expertise special weight will be attached to research merits concerning the development and application of dynamical models of stars and processes in their environments (e.g., convection, pulsation, dynamical atmospheres, stellar winds, proto-planetary disks and planet formation). In assessing the teaching expertise special weight will be attached to experience in teaching of numerical methods relevant for astrophysics.

Uppsala University strives for a more even gender balance in its research and teaching staff. Since most senior lecturers of the Faculty are men, women are especially invited to apply for this position.

Reference: UFV-PA 2013/1768
Last application date: 2014-03-31

Contact: Susanne Höfner (susanne.hoefner@physics.uu.se)

See also http://www.uu.se/en/jobs/?positionId=32460

Announcements

Fizeau Program – Call for applications

The Fizeau exchange visitors program in optical interferometry funds (travel and accommodation) visits of researchers to an institute of his/her choice (within the European Community) to perform collaborative work and training on one of the active topics of the European Interferometry Initiative. The visits will typically last for one month, and strengthen the network of astronomers engaged in technical, scientific and training work on optical/infrared interferometry. The program is open for all levels of astronomers (Ph.D. students to tenured staff), non-EU based missions will only be funded if considered essential by the Fizeau Committee. Applicants are strongly encouraged to seek also partial support from their home or host institutions.

The deadline for applications is March 15. Fellowships can be awarded for missions starting in May 2014.

Further informations and application forms can be found at www.european-interferometry.eu

The program is funded by OPTICON/FP7.

Please distribute this message also to potentially interested colleagues outside of the your community!

Looking forward to your applications,
Josef Hron & Laszlo Mosoni
(for the European Interferometry Initiative)

See also www.european-interferometry.eu

Why Galaxies Care About AGB Stars III: A Closer Look in Space and Time

Vienna, July 28 – August 1, 2014
Second Announcement

The conference aims to build a bridge between AGB research and its application to the modelling of stellar populations and the chemical evolution of galaxies and the universe as a whole. It is a follow-up meeting to the successful Viennese conferences on similar topics in 2006 and 2010.

This time the focus of the meeting will be:

1. Complex Atmospheres: Observation and theoretical understanding
2. Living together: Binarity, disks, ISM interaction
3. What is left: Dust, yields, AGBs in the cosmic matter cycle
4. Resolved and unresolved: AGB star populations in external stellar systems
5. Perspectives: ALMA, SKA, SOFIA, JWST, VLTI+, ELT

Invited Speakers:
J. Blommært, G. Bono, I. Cherchneff, O. Chesneau, A. Chiavassa, N. Cox, L. Girardi, S. Höfner, R. Izzard, M. Mærcker, M. Marengo, P. Marigo, J. Menzies, S. Mohamed, K. Ohnaka, G. Perrin, A. Renzini, R. Riffel, R. Schneider, S.

Srinivasan, O. Straniero, W. Vlemmings

Scientific Organizing Committee:
H. Olofsson (chair), I. Cherchneff, M. Groenewegen, S. Höfner, R.M. Humphreys, A. Jorissen, A. Karakas, F. Kerschbaum (co-chair), T. Lebzelter, C. Maraston, M. Meixner, B. Plez, P. Whitelock, H. van Winckel, R. Wing, M. Wittkowski

Local Organizing Committee:
F. Kerschbaum (chair), J. Hron (co-chair), T. Lebzelter, W. Nowotny, R. Ottensamer, T. Posch, et al.

Important Deadlines:
Registration for the conference is now open via our webpage http://www.univie.ac.at/galagb including the possibility to submit abstracts for invited and contributed talks and posters.

- Deadline for abstract submission for contributed talks: April 30, 2014
- Deadline for applications for financial support: April 30, 2014
- End of early registration: May 31, 2014
- Deadline for abstract submission for posters: June 15, 2014

If you have any questions, please contact us at galagb.astro@univie.ac.at

We are looking forward to seeing you in Vienna in 2014!

See also http://www.univie.ac.at/galagb

Jets in Astrophysics – NAM2014, Portsmouth

The UK National Astronomy Meeting 2014 will include a session on 'Jets in Astrophysics'. This aims to bring together communities working on stellar and extra-galactic jets. The NAM2014 will be in Portsmouth, UK, 23–26 June 2014. The session on Jets will be held on Tuesday 24 June (The exact schedule is still preliminary). Contributions in the area of jets from evolved stars are warmly invited. The conference website is http://www.nam2014.org/ and abstract submission is now open.

See also http://www.nam2014.org/