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Editors: Jacco van Loon, Ambra Nanni and Albert Zijlstra

Editorial

Dear Colleagues,

It is our pleasure to present you the 229$^{\rm th}$ issue of the AGB Newsletter. Among the many interesting papers several deal with star–star interactions or isotopic abundances and grains.

There's another fellowship in wonderful Melbourne on offer, to work with the brilliant Amanda Karakas.

Have a look at the announcement of a new magazine – with no page charges!

And do consider attending the AGB–Supernovæ meeting in Rome next year – if you're "young" you might be in for a chance to win a generous prize! Or why not discuss first results from Gaia in Nice, France, the following month.

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

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

Food for Thought

This month's thought-provoking statement is:

AGB stars can be "blue"!

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

Refereed Journal Papers

Binary stellar mergers with marginally-bound ejecta: excretion disks, inflated envelopes, outflows, and their luminous transients

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We study mass loss from the outer Lagrange point (L_2) in binary stellar mergers and their luminous transients by means of radiative hydrodynamical simulations. Previously, we showed that for binary mass ratios $0.06 \lesssim q \lesssim 0.8$, synchronous L_2 mass loss results in a radiatively inefficient, dust-forming unbound equatorial outflow. A similar outflow exists irrespective of q if the ratio of the sound speed to the orbital speed at the injection point is sufficiently large, $\varepsilon \equiv c_T/v_{\rm orb} \gtrsim 0.15$. By contrast, for cold L_2 mass-loss ($\varepsilon \lesssim 0.15$) from binaries with $q \lesssim 0.06$ or $q \gtrsim 0.8$, the equatorial outflow instead remains marginally-bound and falls back to the binary over tens to hundreds of binary orbits, where it experiences additional tidal torqueing and shocking. As the bound gas becomes virialized with the binary, the luminosity of the system increases slowly at approximately constant photosphere radius, causing the temperature to rise. Subsequent evolution depends on the efficiency of radiative cooling. If the bound atmosphere is able to cool efficiently, as quantified by radiative diffusion time being shorter than the advection time ($t_{\rm diff}/t_{\rm adv} \ll 1$), then the virialized gas collapses to an excretion disk, while for $t_{\rm diff}/t_{\rm adv} \gtrsim 1$ an isotropic wind is formed. Between these two extremes, an inflated envelope transports the heat generated near the binary to the surface by meridional flows. In all cases, the radiated luminosity reaches a fraction $\sim 10^{-2}$ to 10^{-1} of $\dot{M} v_{\rm orb}^2/2$, where $\dot{M}$ is the mass outflow rate. We discuss the implications of our results for transients in the luminosity gap between classical novæ and supernovæ, such as V1309 Sco and V838 Mon.

Accepted for publication in MNRAS
Available from http://arxiv.org/abs/1604.07414
and from http://www.astro.princeton.edu/∼pejcha/ltwo/

Atlas of monochromatic images of planetary nebulæ

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We present an atlas of more than one hundred original images of planetary nebulæ (PNe). These images were taken in a narrow-band filter centred on the nebular emission of the [N II] during several observing campaigns using two moderate-aperture telescopes, at the Complejo Astronómico El Leoncito (CASLEO), and the Estación Astrofísica de Bosque Alegre (EABA), both in Argentina. The data provided by this atlas represent one of the most extensive image surveys of PNe in [N II]. We compare the new images with those available in the literature, and briefly describe all cases in which our [N II] images reveal new and interesting structures.

Accepted for publication in Astronomy & Astrophysics
Available from http://arxiv.org/abs/1606.01066

Search of secondary pulsation modes: globular cluster (NGC 6496)

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The Fourier-discrete-peridogram are used to identify pulsation modes in variables. We have found two pulsation modes in V1 and V2 among 13 new variables as described by Abbas et al.. The five variables V9 to V13 are not shown close to periodic values by analysis of the frequency distribution of multi-band data and also create difficulty to describe their varied nature. The multi-band periodic values of V1 and V6 are matched with known literature values. The scattering of the varied nature of secondary pulsation modes is eliminated by moving average methodology. The phase curve of secondary mode is found to be more smooth compared to a prominent mode of pulsation.

Published in International Journal of Applied Engineering Research
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Common envelope events with low-mass giants: understanding the transition to the slow spiral-in

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We present a three-dimensional (3D) study of common envelope events (CEEs) to provide a foundation for future one-dimensional (1D) methods to model the self-regulated phase of a CEE. The considered CEEs with a low-mass red giant end with one of three different outcomes – merger, slow spiral-in, or prompt formation of a binary. To understand which physical processes determine different outcomes, and to evaluate how well 1D simulations model the self-regulated phase of a CEE, we introduce tools that map our 3D models to 1D profiles. We discuss the differences in the angular momentum and energy redistribution in 1D and 3D codes. We identified four types of ejection processes: the pre-plunge-in ejection, the outflow during the plunge-in, the outflow driven by recombination, and the ejection triggered by a contraction of the circumbinary envelope. Significant mass is lost in all cases, including the mergers. Therefore a self-regulated spiral-in can start only with a strongly reduced envelope mass. We derive the condition to start a recombination outflow, which can proceed either as a runaway or a stationary outflow. We show that the way the energy of the inspiraling companion is added to the envelope in 1D studies intensifies the envelope's entropy increase, alters the start of the recombination outflow, and leads to different outcomes in 1D and 3D studies. The steady recombination outflow may dispel most of the envelope in all slow spiral-in cases, making the existence of a long-term self-regulated phase debatable, at least for low-mass giant donors.

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Parallax of a Mira variable R Ursæ Majoris studied with astrometric VLBI

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We have measured an annual parallax of the Mira variable R Ursæ Majoris (R UMa) with the VLBI exploration for Radio Astronomy (VERA). From the monitoring VLBI observations spanning about two years, we detected H_2O

maser spots in the LSR velocities ranges from 37 to 42 km s^{-1}. We derived an annual parallax of 1.97 ± 0.05 mas, and it gives a corresponding distance of 508 ± 13 pc. The VLBI maps revealed 72 maser spots distributed in ~ 110 au area around an expected stellar position. Circumstellar kinematics of the maser spots were also revealed by subtracting a systemic motion in the *Hipparcos* catalog from proper motions of each maser spots derived from our VLBI observations. Infrared photometry is also conducted to measure a K band apparent magnitude, and we obtained a mean magnitude of $m_K = 1.19 \pm 0.02$ mag. Using the trigonometric distance, the m_K is converted to a K band absolute magnitude of $M_K = -7.34 \pm 0.06$ mag. This result gives a much more accurate absolute magnitude of R UMa than previously provided. We solved a zero-point of M_K–$\log P$ relation for the Galactic Mira variables and obtained a relation of $M_K = -3.52 \log P + (1.09 \pm 0.14)$. Other long period variables including red supergiants, whose distances were determined from astrometric VLBI, were also compiled to explore the different sequences of M_K–$\log P$ relation.

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Constraining dust properties in circumstellar envelopes of C-stars in the Small Magellanic Cloud: optical constants and grain size of carbon dust

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We present a new approach aimed at constraining the typical size and optical properties of carbon dust grains in Circumstellar envelopes (CSEs) of carbon-rich stars (C-stars) in the Small Magellanic Cloud (SMC). To achieve this goal, we apply our recent dust growth description, coupled with a radiative transfer code to the CSEs of C-stars evolving along the TP-AGB, for which we compute spectra and colors. Then we compare our modeled colors in the near- and mid-infrared (NIR and MIR) bands with the observed ones, testing different assumptions in our dust scheme and employing several data sets of optical constants for carbon dust available in the literature. Different assumptions adopted in our dust scheme change the typical size of the carbon grains produced. We constrain carbon dust properties by selecting the combination of grain size and optical constants which best reproduces several colors in the NIR and MIR at the same time. The different choices of optical properties and grain size lead to differences in the NIR and MIR colors greater than two magnitudes in some cases.
We conclude that the complete set of observed NIR and MIR colors are best reproduced by small grains, with sizes between ~ 0.035 and ~ 0.12 μm, rather than by large grains between ~ 0.2 and 0.7 μm. The inability of large grains to reproduce NIR and MIR colors seems independent of the adopted optical data set. We also find a possible trend of the grain size with mass-loss and/or carbon excess in the CSEs of these stars.

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Common envelope events with low-mass giants: understanding the energy budget

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Common envelope events are important interactions between two binary stars that lead to the formation of close binary

systems. We present here a systematic three-dimensional study in which we model common envelope events with low-mass giant donors. The results allow us to revise the energy formalism that is usually used to determine common envelope event outcomes. We show that the energy budget for this type of system should include the recombination energy, and that it also must take into account that a significant fraction of the released orbital energy is taken away by the ejecta. We provide three ways in which our results can be used by binary population synthesis studies: a relation that links the observed post-common envelope binary with the initial binary parameters, a fitting formula for the $\alpha_{\rm ce}\lambda$ parameter of the standard energy formalism, and a revised energy formalism that takes into account both the recombination energy and the energy that is taken away by the ejecta.

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Ultraviolet emission from main-sequence companions of AGB stars

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Although the majority of known binary Asymptotic Giant Branch (AGB) stars are symbiotic systems (i.e. with a WD as a secondary star), main-sequence companions of AGB stars can be more numerous, even though they are more difficult to find because the primary high luminosity hampers the detection of the companion at visual wavelengths. However, in the ultraviolet the flux emitted by a secondary with $T_{\rm eff} > 5500 \sim 6000$ K may prevail over that of the primary, and then it can be used to search for candidates to binary AGB stars. In this work, theoretical atmosphere models are used to calculate the UV excess in the GALEX near- and far-UV bands due to a main-sequence companion. After analysing a sample of confirmed binary AGB stars, we propose as a criterion for binarity: (1) the detection of the AGB star in the GALEX far-UV band and/or (2) a GALEX near-UV observed-to-predicted flux ratio > 20. These criteria have been applied to a volume-limited sample of AGB stars within 500 pc of the Sun; 34 out of the sample of 58 AGB stars ($\sim 60\%$) fulfil them, implying to have a MS companion of spectral type earlier than K0. The excess in the GALEX near- and far-UV bands cannot be attributed to a single temperature companion star, thus suggesting that the UV emission of the secondary might be absorbed by the extended atmosphere and circumstellar envelope of the primary or that UV emission is produced in accretion flows.

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Pulsations powered by hydrogen shell burning in white dwarfs

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In the absence of a third dredge-up episode during the asymptotic giant branch phase, white dwarf models evolved from low-metallicity progenitors have a thick hydrogen envelope, which makes hydrogen shell burning be the most important energy source. We investigate the pulsational stability of white dwarf models with thick envelopes to see whether nonradial g-mode pulsations are triggered by hydrogen burning, with the aim of placing constraints on hydrogen shell burning in cool white dwarfs and on a third dredge-up during the asymptotic giant branch evolution of their progenitor stars. We construct white-dwarf sequences from low-metallicity progenitors by means of full evolutionary calculations,

and analyze their pulsation stability for the models in the range of effective temperatures $T_{\rm eff} \sim 15000$–8000 K. We demonstrate that, for white dwarf models with masses $M_\star \lesssim 0.71$ $M_\odot$ and effective temperatures $8500 \lesssim T_{\rm eff} \lesssim 11600$ K that evolved from low-metallicity progenitors ($Z = 0.0001$, 0.0005, and 0.001) the dipole ($\ell = 1$) and quadrupole ($\ell = 2$) g_1 modes are excited mostly due to the hydrogen-burning shell through the ε mechanism, in addition to other g modes driven by either the κ–γ or the convective driving mechanism. However, the ε mechanism is insufficient to drive these modes in white dwarfs evolved from solar-metallicity progenitors. We suggest that efforts should be made to observe the dipole g_1 mode in white dwarfs associated with low-metallicity environments, such as globular clusters and/or the galactic halo, to place constraints on hydrogen shell burning in cool white dwarfs and the third dredge-up episode during the preceding asymptotic giant branch phase.

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Further ALMA observations and detailed modeling of the Red Rectangle

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We aim to study the rotating and expanding gas in the Red Rectangle, which is a well known bipolar nebula surrounding a double stellar system whose primary recently left the asymptotic giant branch (AGB) phase. We analyze the properties of both components and the relation between them. Rotating disks have been very elusive in post-AGB nebulæ, in which gas is almost always found to be in expansion.
We present new high-quality ALMA observations of this source in $C^{17}O$ $J = 6$–5 and $H^{13}CN$ $J = 4$–3 line emission and results from a new reduction of already published ^{13}CO $J = 3$–2 data. A detailed model fitting of all the molecular line data, including previous maps and single-dish observations of lines of CO, C II, and C I, was performed using a sophisticated code that includes an accurate nonlocal treatment of radiative transfer in 2D (assuming axial symmetry). These observations (of low- and high-opacity lines requiring various degrees of excitation) and the corresponding modeling allowed us to deepen the analysis of the nebular properties. We also stress the uncertainties, particularly in the determination of the boundaries of the CO-rich gas and some properties of the outflow.
We confirm the presence of a rotating equatorial disk and an outflow, which is mainly formed of gas leaving the disk. The mass of the disk is ~ 0.01 $M_\odot$, and that of the CO-rich outflow is around ten times smaller. High temperatures of ~ 100 K are derived for most components. From comparison of the mass values, we roughly estimate the lifetime of the rotating disk, which is found to be of about 10 000 yr. Taking data of a few other post-AGB composite nebulæ into account, we find that the lifetimes of disks around post-AGB stars typically range between about 5000 and more than 20 000 yr. The angular momentum of the disk is found to be high, ~ 9 $M_\odot$ au km s^{-1}, which is comparable to that of the stellar system at present. Our observations of $H^{13}CN$ show a particularly wide velocity dispersion and indicate that this molecule is only abundant in the inner Keplerian disk, at ~ 60 au from the stellar system. We suggest that HCN is formed in a dense photodissociation region (PDR) due to the UV excess known to be produced by the stellar system, following chemical mechanisms that are well established for interstellar medium PDRs and disks orbiting young stars. We further suggest that this UV excess could lead to an efficient formation and excitation of PAHs and other C-bearing macromolecules, whose emission is very intense in the optical counterpart.

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Simulating the onset of grazing envelope evolution

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We present the first three-dimensional gas-dynamical simulations of the grazing envelope evolution (GEE), with the goal of exploring the basic flow properties and the role of jets at the onset of the GEE. In the simulated runs, a secondary main-sequence star grazes the envelope of the primary asymptotic giant branch (AGB) star. The orbit is circular at the radius of the AGB primary star on its equator. We inject two opposite jets perpendicular to the equatorial plane from the location of the secondary star, and follow the evolution for several orbital periods. We explore the flow pattern by which the jets eject the outskirts of the AGB envelope. After one orbit the jets start to interact with gas ejected in previous orbits and inflate hot low-density bubbles.

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Coordinated analysis of two graphite grains from the CO3.0 LAP 031117 meteorite: first identification of a CO nova graphite and a presolar iron sulfide subgrain

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Presolar grains constitute remnants of stars that existed before the formation of the solar system. In addition to providing direct information on the materials from which the solar system formed, these grains provide ground-truth information for models of stellar evolution and nucleosynthesis. Here we report the in-situ identification of two unique presolar graphite grains from the primitive meteorite LaPaz Icefield 031117. Based on these two graphite grains, we estimate a bulk presolar graphite abundance of 5^{+7}_{-3} ppm in this meteorite. One of the grains (LAP-141) is characterized by an enrichment in ^{12}C and depletions in ^{33,34}S, and contains a small iron sulfide subgrain, representing the first unambiguous identification of presolar iron sulfide. The other grain (LAP-149) is extremely ^{13}C-rich and ^{15}N-poor, with one of the lowest ^{12}C/^{13}C ratios observed among presolar grains. Comparison of its isotopic compositions with new stellar nucleosynthesis and dust condensation models indicates an origin in the ejecta of a low-mass CO nova. Grain LAP-149 is the first putative nova grain that quantitatively best matches nova model predictions, providing the first strong evidence for graphite condensation in nova ejecta. Our discovery confirms that CO nova graphite and presolar iron sulfide contributed to the original building blocks of the solar system.

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Lost and found: evidence of second generation stars along the asymptotic giant branch of the globular cluster NGC 6752

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We derived chemical abundances for C, N, O, Na, Mg and Al in 20 asymptotic giant branch (AGB) stars in the globular cluster NGC 6752. All these elements (but Mg) show intrinsic star-to-star variations and statistically significant correlations or anti-correlations analogous to those commonly observed in red giant stars of globular clusters hosting multiple populations. This demonstrates that, at odds with previous findings, both first and second generation stars populate the AGB of NGC 6752. The comparison with the Na abundances of red giant branch stars in the same cluster reveals that second generation stars (with mild Na and He enrichment) do reach the AGB phase. The only objects that are not observed along the AGB of NGC 6752 are stars with extreme Na enhancement. This is also consistent with standard stellar evolution models, showing that highly Na and He enriched stars populate the bluest portion of the horizontal branch and, because of their low stellar masses, evolve directly to the white dwarf cooling sequence, skipping the AGB phase.

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Carbon and oxygen isotopic ratios for nearby Miras

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Carbon and oxygen isotopic ratios are reported for a sample of 46 Mira and SRa-type variable asymptotic giant branch (AGB) stars. Vibration–rotation first and second-overtone CO lines in 1.5–2.5 μm spectra were measured to derive isotopic ratios for $^{12}C/^{13}C$, $^{16}O/^{17}O$, and $^{16}O/^{18}O$. Comparisons with previous measurements for individual stars and with various samples of evolved stars, as available in the extant literature, are discussed. Models for solar composition AGB stars of different initial masses are used to interpret our results. We find that the majority of M-stars have main sequence masses ≤ 2 $M_\odot$ and have not experienced sizable third dredge-up (TDU) episodes. The progenitors of the four S-type stars in our sample are slightly more massive. Of the six C-stars in the sample three have clear evidence relating their origin to the occurrence of TDU. Comparisons with O-rich presolar grains from AGB stars that lived before the formation of the solar system reveal variations in the interstellar medium chemical composition. The present generation of low-mass AGB stars, as represented by our sample of long period variables (LPVs), shows a large spread of $^{16}O/^{17}O$ ratios, similar to that of group 1 presolar grains and in agreement with theoretical expectations for the composition of mass 1.2–2 $M_\odot$ stars after the first dredge-up. In contrast, the $^{16}O/^{18}O$ ratios of present-day LPVs are definitely smaller than those of group 1 grains. This is most probably a consequence of the the decrease with time of the $^{16}O/^{18}O$ ratio in the interstellar medium due to the chemical evolution of the Milky Way. One star in our sample has an O composition similar to that of group 2 presolar grains originating in an AGB star undergoing extra-mixing. This may indicate that the extra-mixing process is hampered at high metallicity, or, equivalently, favored at low metallicity. Similarly to O-rich grains, no star in our sample shows evidence of hot bottom burning, which is expected for massive AGB stars.

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8E987A01C1C65C51E96BF4F7785139C9.c2.iopscience.cld.iop.org

HD 179821 (V1427 Aql, IRAS 19114+0002) – a massive post-red supergiant star?

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We have derived elemental abundances of a remarkable star, HD 179821, with unusual composition (e.g., [Na/Fe] $= 1.0 \pm 0.2$ dex) and extra-ordinary spectral characteristics. Its metallicity at [Fe/H] = 0.4 dex places it among the most metal-rich stars yet analyzed. The abundance analysis of this luminous star is based on high resolution and high quality ($S/N \sim 120$–420) optical échelle spectra from McDonald Observatory and Special Astronomy Observatory. The data includes five years of observations over twenty-one epochs. Standard 1D LTE analysis provides a fresh determination of the atmospheric parameters over all epochs: $T_{\rm eff} = 7350 \pm 200$ K, $\log g = +0.6 \pm 0.3$, and a microturbulent velocity $\xi = 6.6 \pm 1.6$ km s^{-1} and [Fe/H] $= 0.4 \pm 0.2$, and a carbon abundance [C/Fe] $= -0.19 \pm 0.30$. We find oxygen abundance [O/Fe] $= -0.25 \pm 0.28$ and an enhancement of 0.9 dex in N. A supersonic macroturbulent velocity of 22.0 ± 2.0 km s^{-1} is determined from both strong and weak Fe I and Fe II lines. Elemental abundances are obtained for 22 elements. HD 179821 is not enriched in *s*-process products. Eu is overabundant relative to the anticipated [X/Fe] ≈ 0.0. Some peculiarities of its optical spectrum (e.g., variability in the spectral line shapes) is noticed. This includes the line profile variations for Hα line. Based on its estimated luminosity, effective temperature and surface gravity, HD 179821 is a massive star evolving to become a red supergiant and finally a Type II supernova.

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The 6-μm feature as a tracer of aliphatic components of interstellar carbonaceous grains

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An unidentified infrared emission (UIE) feature at 6.0 μm is detected in a number of astronomical sources showing the UIE bands. In contrast to the previous suggestion that this band is due to C=O vibrational modes, we suggest that the 6.0 μm feature arises from olefinic double-bond functional groups. These groups are likely to be attached to aromatic rings which are responsible for the major UIE bands. The possibility that the formation of these functional groups is related to the hydrogenation process is discussed.

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The two central stars of NGC 1514: can they actually be related?

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The central star of the planetary nebula NGC 1514 is among the visually brightest central stars in the sky ($V = 9.5$ mag). It has long been known to show a composite spectrum, consisting of an A-type star and a much hotter star

responsible for the ionization of the surrounding nebula. These two stars have always been assumed to form a binary system. High-resolution spectrograms obtained with Espadons at the CFHT on Mauna Kea have allowed to measure good radial velocities for both stars. They differ by 13 ± 2 km s^{-1}. The stellar velocities have not changed after 500 days. We have also estimated the metallicity of the cooler star. Combining these data with other information available in the literature, we conclude that, unless all the published nebular radial velocities are systematically wrong, the cooler star is just a chance alignment, and the two stars are not orbiting each other. The cooler star cannot have played any role in the formation of NGC 1514.

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Conference Paper

Stellar populations in the outskirts of M 31: the mid-infrared view

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The mid-infrared provides a unique view of galaxy stellar populations, sensitive to both the integrated light of old, low-mass stars and to individual dusty mass-losing stars. We present results from an extended *Spitzer*/IRAC survey of M 31 with total lengths of 6.°6 and 4.°4 along the major and minor axes, respectively. The integrated surface brightness profile proves to be surprisingly difficult to trace in the outskirts of the galaxy, but we can also investigate the disk/halo transition via a star count profile, with careful correction for foreground and background contamination. Our point-source catalog allows us to report on mid-infrared properties of individual objects in the outskirts of M 31, via cross-correlation with PAndAS, WISE, and other catalogs.

Oral contribution, published in IAU Symposium 321, "Formation and evolution of galaxy outskirts", Eds. A. Gil de Paz, J.C. Lee & J.H. Knapen, Cambridge University Press, Cambridge
Available from http://arxiv.org/abs/1606.05215

Job Advert

Monash University, Australia Research Fellow in Astrophysics

An exciting opportunity is available in the School of Physics and Astronomy for a Research Fellow to conduct research in stellar astrophysics. As the successful candidate you will work with Dr. Amanda Karakas on a research program aimed at analysing the chemical compositions of stars.

You will be expected to work on observational topics related to stellar astrophysics, which could include Galactic globular clusters, metal-poor stars, evolved stars, and post-AGB stars.

The position is for 2 years, fixed term. Contact Amanda Karakas if you have questions about the position.

See also http://www.jobs-monash.jxt.net.au/academic-jobs/research-fellow-in-astrophysics/757636

Announcements

IAU symposium 330
Astrometry and Astrophysics in the Gaia sky

We are pleased to announce the opening of the registration for the IAU symposium 330 – Astrometry and Astrophysics in the Gaia sky, to be held in Nice (France), from 24–28$^{\text{th}}$ April 2017.

The goal of this IAU symposium is to ensure the world-wide sharing of the Gaia mission results, foster international collaborations and discussions that will enhance the Gaia scientific return. This symposium will mark the first step of the Gaia revolution in astrometry, our understanding of the Milky Way galaxy, stellar physics and the Solar system bodies. The astrometry and reference frames science will be one of the conference highlights. The Gaia DR1 is indeed confirmed for the end of summer 2016. It will include the five-parameter astrometric solution – positions, parallaxes, and proper motions – for 2.5 million stars in common between the Tycho-2 Catalogue and Gaia (TGAS).

All these topics will be at the heart of the interdisciplinary scientific discussions of the symposium. We indeed hope to bring together the diverse scientific communities that will be impacted by the Gaia data. The conference will also be a tribute to François Mignard, expert in astrometry and reference frames, and chair of the Gaia Data Processing and Analysis Consortium since its formation and until the end of 2012.

Please visit the IAUS 330 website for more information: http://iaus330.sciencesconf.org/

The deadline for abstract submission and early registration are December 4, 2016 and January 10, 2017, respectively.

We are looking forward to seeing you in Nice in April 2017!

Alejandra Recio-Blanco, Anthony Brown and Timo Prusti (for the SOC)
Patrick de Laverny (for the LOC)

See also http://iaus330.sciencesconf.org/

The AGB–Supernovæ mass transition

The conference "The AGB–Supernovæ mass transition" will be held at the Observatory of Rome, from the 27$^{\text{th}}$ to the 31$^{\text{st}}$ march, 2017. The meeting will convey experts from various fields to focus on the properties of AGB stars and supernovæ and, more specifically, on the transition between the two regimes. The main topics of the meeting will be: Dust formation form intermediate mass and massive stars; Mass–M_{core} relations; The boundary in mass with SN II explosions and the mass transition from super-AGB to AGB; Evolution into SN II, electron-capture supernovæ, SN Ia; Binary population synthesis for SNIa rates; Nuclear physics connection; Observational constraints on AGB, super-AGB and massive stars populations.

During the conference two prizes for young astronomers will be awarded. The prizes will consist of 500 euros plus the reimbursement of the plane (or train) ticket. The eligibility conditions to join the competition are found in the webpage of the conference.

See also http://agb-supernovae.weebly.com