

# Why Galaxies Care About AGB Stars II. Shining Examples and Common Inhabitants

Scientific Programme

*Monday, August 16*

08:00 Registration

08:45 Welcome

## **Session I – Complex Atmospheres**

**09:15** Current status of stellar evolutionary models for AGB stars (Karakas)

09:50 Observational constraints on nucleosynthesis and mixing in AGB stars (Abia)

10:15 Evolution and nucleosynthesis of extremely metal poor AGB stars (Straniero)

*10:30 Coffee break & poster viewing*

**11:00** Extra-mixing processes in AGB stars (Stancliffe)

11:25 Nucleosynthesis in non-convective mixing of low mass red giants: effects of new reaction rates (Palmerini)

11:40 Evoluton and Nucleosynthesis of SAGB stars (Lau)

11:55 The s-process elemental distribution in an s-enhanced extremely metal-poor star (Peterson)

*12:10 Lunch break*

14:00 The Fruity Database: chemical features of low mass AGB stars (Dominguez)

14:15 AGB stars in Galactic globular clusters - are they really chemically distinct from their fellow RGB and HB stars? (Campbell)

14:30 A grid of model atmospheres for S stars (van Eck)

14:45 Abundance patterns in S stars (Neyskens)

**15:00** Extended atmospheres of AGB stars: modelling and measurement (Ireland)

*15:25 Coffee break & poster viewing*

- 16:00 Photometric modelling of mass-losing C-type Miras (Nowotny)
- 16:15 Determination of the fundamental parameters of C-rich hydrostatic stars with spectro-interferometry (Paladini)
- 16:30 The extended atmospheres of Mira variables probed by VLTI, VLBA, and APEX (Wittkowski)
- 16:45 High-spatial and high-spectral observations of the inhomogeneous outer atmosphere of the M giant BK Vir (Ohnaka)
- 17:00** Observations and models of AGB star variability (Lebzelter)
- 17:25 Pulsation of AGB Stars in the Magellanic Cloud Clusters NGC 419 and NGC 1978 (Kamath)
- 17:40 *End of first day*
- 18:30 *Vienna city walking tour*

*Tuesday, August 17*

- 09:00** What can we learn from post-AGB stars? (van Winckel)
- 09:25 Nucleosynthesis origin of PG1159 stars and of a rare subclass of presolar graphite grains (Gallino)

## **Session II - Environment**

- 09:40** Mass-loss mechanisms on the AGB (Höfner)
- 10:15 The GRAMS AGB Models: Calculating the Mass-Loss Return to the LMC from SED Fits to SAGE Data (Srinivasan)
- 10:30 *Coffee break & poster viewing*
- 11:00 A large survey of S-type AGB stars as seen by Spitzer (Smolders)
- 11:15** Grain nucleation experiments and other laboratory data (Andersen)
- 11:50** Dust species along the AGB (Waters)
- 12:15 *Lunch break*

- 14:00 Determining the forsterite abundance of the dust around Asymptotic Giant Branch stars (de Vries)
- 14:15 Metallic iron grains in AGB winds (McDonald)
- 14:30** Circumstellar chemistry: abundances, models, ... (Cernicharo)
- 15:05 An interferometric spectral-line survey of IRC+10216 in the 345 GHz band (Patel)
- 15:20 Coffee break & poster viewing*
- 15:50** Mass-loss characteristics: rates, temporal, and spatial modulations (Schoeier)
- 16:25 Mass-loss rates and molecular abundances of S-type AGB stars (Ramstedt)
- 16:40 Interferometric monitoring of Evolved Stars (Karavicova)
- 16:55 Space-based mid-infrared observations of obscured AGB and post-AGB stars (Engels)
- 17:10 Probing circumstellar environments with combined HI and CO observations (Libert)
- 17:25 Circumbinary discs around binary post-AGB stars (Gielen)
- 17:40 Dynamics of extended AGB star envelopes (Dreyer)
- 17:40 End of 2<sup>nd</sup> day*
- 19:00 Public talk “Weltraumteleskop Herschel – den Sternen ein wenig näher“ by Franz Kerschbaum (in German)*

*Wednesday, August 18*

- 09:00 Announcements by the LOC
- 09:05** From circumstellar envelopes to the ISM (Ueta)
- 09:40 Binary Properties Deduced from Spiral Structures of AGB Envelopes (Kim)
- 09:55 Tails of Stellar Mass-Loss: VLA Imaging of HI in Circumstellar Envelopes (Matthews)

### **Session III – Common Inhabitants**

**10:10** Studies of integrated properties of AGB stars in resolved and unresolved stellar populations

A: Modelling simple stellar populations/star clusters (Lançon)

*10:45 Coffee break*

**11:05** Studies of integrated properties of AGB stars in resolved and unresolved stellar populations

B: Galaxies (Maraston)

11:40 The role of the TP-AGB phase in colour-M/L relations (Portinari)

*11:55 Lunch break*

*13:30 Excursion to Klosterneuburg*

*Thursday, August 19*

09:00 Announcements by the LOC

09:05 The AGB population of NGC 6822 (Sibbons)

**09:20** AGB stars as polluters (gas and dust): models (Ventura)

09:45 Planetary nebulae: constraints to AGB evolution in different environments (Stanghellini)

10:00 Evolutionary models for AGB stars in the Magellanic Clouds (Marigo)

10:15 Rubidium-rich AGB stars in the Magellanic Clouds (Garcia-Hernandez)

*10:30 Coffee break & poster viewing*

**11:00** Single and binary AGB populations: astrophysical consequences -- enrichments (Pols)

### **Session IV – Out there**

**11:35** The Local Group: Inventory and history (Tolstoy)

*12:10 Lunch break*

14:00 A Spitzer SAGE Overview of Asymptotic Giant Branch Stars in the Small

Magellanic Cloud (Boyer)

- 14:15** Giants in dwarfs: The AGB stars of the dwarf galaxies in the LG (Battinelli/Demers)
- 14:50 Temporal Variations of Near-infrared Spectra of Carbon Stars in the Large Magellanic Cloud with AKARI (Shimonishi)
- 15:05 Towards a universal period luminosity relation - LPVs in NGC 147 and NGC 185 (Lorenz)
- 15:20 An infrared survey of pulsating giant stars in the spiral galaxy M33: dust production, star formation history, and galactic structure (van Loon)
- 15:35 *Coffee break & poster viewing*
- 16:10 Probing Dust Production in the Local Group (Sloan)
- 16:25 Mass-loss from AGB stars in the Local Group: studying the effect of metallicity (Lagadec)
- 16:40** AGB stars as tracers of spatially resolved star formation histories (Cioni)
- 17:15 Constraining the AGB Contribution to the Near-Infrared Mass-to-Light Ratio of Galaxies (Melbourne)
- 17:30 *End of 4<sup>th</sup> day*
- 19:30 *Conference dinner at the University Observatory*

*Friday, August 20*

**Session V – Perspectives**

- 09:15** AGB research in the next decade: what is needed tomorrow to answer today's questions? (Zijlstra)
- 09:50** Ground based perspectives (optical) (Käufl)
- 10:25 *Coffee break & poster viewing*
- 11:00** Ground based perspectives (radio) (Menten)
- 11:25** Space perspectives (Meixner)

*11:50 Lunch break*

**13:30** Herschel - first results and perspectives (PACS/SPIRE) (Groenewegen)

**13:55** Herschel - first results and perspectives (HIFI) (Bujarrabal)

14:20 Mass loss history of AGB stars as seen by Herschel (Kerschbaum)

14:35 X Her and TX Psc: Two cases of interaction of AGB mass loss with the ISM ?  
(Jorissen)

14:50 Circumstellar molecular chemistry of evolved AGB stars as traced by Herschel  
HIFI, PACS and SPIRE (Decin)

15:05 Herschel-SPIRE FTS spectroscopy of the carbon-rich objects AFGL 2688, AFGL  
618 and NGC 7027 (Wesson)

15:20 A HIFI view of circumstellar H<sub>2</sub>O emission from the S-type AGB star  
 $\chi$  Cyg (Maercker)

**15:35** Conference Summary (Wood)

*16:00 End of meeting*