HDEF4 Draft Science Programme

VERSION 14.08.18

## **SUNDAY**

## 19:00 – 21:00 WELCOME RECEPTION AT ARMAGH CITY HOTEL

**MONDAY**

## 08:30 Registration

#### 09:30 Welcome - Introduction

**Michael Burton:** Welcome (10)  
**Simon Jeffery**: Introduction (20)

#### 10:00 Surveys and Statistics

**Session 1 1x35 + 1x18**

**Patrick** **Tisserand: Results from a first dedicated spectroscopic search for new RCB stars over the entire sky**,   
**Pamela Martin***:* Distances and luminosities of hydrogen-deficient populations in the Galaxy

## 10:50 Tea/Coffee + Registration

#### 11:20 (contd)

**Session 2 1x35 + 1x18**

**Stephan** **Geier: High-velocity stars**  
**Ulrich Hebe**r: He sdO stars in the Gaia era

## 12:20 Lunch + Registration

#### 13:20 High-Mass Stars

**Session 3 1x35 + 3x18**

**Ylva** **Götberg: Stripped Massive stars**   
**Andreas Sander**: Spectral modelling and analyses of high- and low-mass Wolf-Rayet stars  
**Joseph Callingham**: Anisotropic wind in a new massive system: a window onto critical rotation and gamma-ray bursts  
**Eliceth Rojas Montes**: Testing how massive stars evolve, lose mass, and collapse at low metal content

## 14:50 Tea/Coffee

**Session 4 1x35 + 3x18**

#### 15:10 (contd)

**Jorick Vink:** Mass-loss predictions for Hydrogen deficient stars  
**Avishai Gilkis**: Angular momentum evolution in progenitors of hydrogen-deficient core-collapse supernovae (late talk)

#### 15:30 Binaries

**Thomas** **Kupfer: AM CVn stars: an overview**   
**Matthew Green:** Gaia14aae: An eclipsing AM CVn that challenges formation models  
16:40 BREAK

## 18:00 RECEPTION AT PLANETARIUM AND TOURS OF THE OBSERVATORY

## 19:00 CONFERENCE PHOTOGRAPH

## 20:00 END

## **TUESDAY**

#### 09:00 Low-Mass Stars

**Session 5 1x35 + 2x18 + sparklers x 18**

**Stephen** **Justham: Double subdwarf binaries and other oddities**  
**Joris Vos**: Using wide sdB+MS binaries to constrain RLOF models  
**Amanda Karakas**: Very metal-rich hydrogen deficient stars  
**SPARKLERS**

## 10:30 Tea/Coffee

#### 11:00 (contd).

**Session 6 2x35 + 1x18**

**Peter** **Nemeth: He-sdB and He-sdO stars**  
**JJ Hermes: The menagerie of hydrogen-deficient white dwarfs**   
**Alina Istrate**: Extremely low-mass white dwarfs: the story so far

## 12:30 Lunch

#### 13:30 (contd)

**Session 7 1x35 + 2x18**

**Nicole** **Reindl:** **Recent Progress on our Understanding of PG1159 and O(He) stars**  
**Thomas Rauch***:* DO white dwarfs   
**Marylin Latour:**The extreme horizontal branch population of Omega Centauri

## 14:40 Tea/Coffee

**Session 8 Discussion x 90**

#### 15:00 Connections I -- H-deficient stars from and in binaries

**DISCUSSION I** - THE ROLE OF BINARY STARS

## 16:30 TOUR OF NAVAN FORT

## 18.30 RECEPTION WITH THE LORD MAYOR OF ARMAGH

## 19:30 DINNER

## 20:30 BUS

## **WEDNESDAY**

#### 09:00 R CrB Stars

**Session 9 1x35 + 3x18**

**Geoff** **Clayton: R Coronae Borealis Stars, Products of Stellar Mergers**   
**Gajendra Pandey**: Abundances in Extreme Helium and R CrB Stars   
**Anirban Bhowmick**: Detection of fluorine in hot Extreme Helium Stars  
**Hema B. P.**: Discovery of the Relatively H-poor metal rich Giants in the Globular Cluster omega Centauri

## 10:30 Tea/Coffee

#### 11:00 Ejecta

**Session 10 1x35 + 3x18**

#### **Edward** **Montiel: Circumstellar Dust Shells: Clues to the Evolution of R Coronae Borealis Stars**: **Kameswara Rao**: RCrB minima and dust ejection **Anibal Garcia-Hernandez:** Dust and Fullerenes in RCrB ejecta: **Mark Walker**: Hydrogen-deficient stellar surfaces via accretion from hydrogen snow clouds

## 12.30 EXCURSION

## 13:00 ARGORY HOUSE (+LUNCH)

## 15:30 ARMAGH CIDER COMPANY

## 18:00 RETURN TO CITY HOTEL

## 19:00 PUBLIC LECTURE @ PLANETARIUM

## **THURSDAY**

**Session 11 1x35 + 3x18**

#### 09:00 Transients

## **Peter** **van Hoof:** **Observations of born-again stars** **Marcelo M. Miller Bertolami**: An inside-out planetary nebula around a [WC] star in the making **Stefan Kimeswenger**: New spectroscopy of V605 Aql and IRAS 15154-5258 - what can we learn from the older twins of Sakurai's star 10:30 Tea/Coffee

#### 11:00 Connections II -- H-deficient stars from birth to death

**Session 12: 1x35 + 2x18 + sparklers**

**Ashley** **Ruiter: CO+He white dwarf merger channels**   
**Josiah Schwab***:* Double White Dwarf Mergers and the Formation of R Coronae Borealis Stars  
**Falk Herwig:** The very-late thermal pulse and similar events in rapidly accreting white dwarfs: 3D hydrodynamic simulations and the i process nucleosynthesis  
**SPARKLERS**

## 12:30 Lunch

**Session 13 Discussion x 90**

#### 13:30 Connections II -- H-deficient stars from birth to death

**DISCUSSION II**  - DOUBLE WHITE DWARF MERGERS AND THE RCrB CHANNELS

## 15:00 Tea/Coffee

## 15:30 WALKING TOUR OF ARMAGH (inc ROBINSON LIBRARY, CATHEDRALS, …)

## 19:00 CONFERENCE DINNER

## 19:30 DINNER

## **FRIDAY**

#### 09:30 Explosions

**Session 14 1x35 + 2x18 (chair: Ashley Ruiter)**

**Danny** **Steeghs: Hydrogen-deficient novae**:   
**Patrick Neunteufel**: Hydrogen-deficient single degenerate binaries as progenitors of astrophysical transients   
**Mridweeka Singh**: Peculiar Supernovae of type Iax: The case study of SN 2014dt

10:40 Tea/Coffee

#### 11:10 Pulsation

**Session 15 1x35 +2x18 (chair: Ashley Ruiter)**

**David** **Kilkenny: TBD …**,  
**Pawel Pietrukowicz**: Hydrogen-deficient stars in the OGLE data  
**Conor Byrne**: Post-common-envelope binary stars: Radiative levitation and blue large-amplitude pulsators

## 12:30 Lunch

#### 13:30 (contd)

**Session 16 2x18 +**

**Hideyuki Saio***:* Pulsations in H-deficient stars:  
**Simon Jeffery**: V652 Herculis: The born-again rocket star

#### Summary

**TBD**

## 15:00 CLOSE of CONFERENCE

## Tea/Coffee

## **SATURDAY**

## 08:30 OPTIONAL EXCURSION TO GIANTS CAUSEWAY AND BUSHMILLS DISTILLERY