

**IAU SYMPOSIUM 281**

**"BINARY PATHS TO TYPE IA SUPERNOVAE EXPLOSIONS"**

**PADOVA, ITALY, JULY 4-8 281**

*Only the name of the presenter is given here – Please check Abstract Booklet for a full list of authors.*

**SUNDAY JULY 3**

*18.30 Wine and Cheese reception and Castle visit at INAF-Padova*

**REGISTRATION TABLE OPEN AT INAF**

**MONDAY JULY 4**

**REGISTRATION TABLE OPEN AFTER 8.15 am**

**9-9.55 INTRODUCTION**

9-9.15 Marina Orio – INAF-PD Director - Padova mayor - 5 min each  
"Welcome addresses"

9.15-9.55 M. Kasliwal (invited)  
"Transients in the local Universe: bridging the gap between Novae and Supernovae"

**9.55-14.40 Session 1 - SUPERNOVAE: UNDERSTANDING LIGHT CURVES AND SPECTRA**

9.55-10.35 R. Kirshner (invited)  
"Using infrared observations to understand SN Ia"

10.35-11.05 Coffee Break

11.05-11.45 S. Benetti (invited)  
"20 years of SNIa spectral diversity: what have we learnt?"

11.45-12.05 S. Rodney  
"HST observations of Type Ia Supernovae at  $z > 1.5$ "

12.05-12.25 P. Hoeflich  
"Constraining the Properties of the Progenitors of SNe Ia Using their Light Curves"

12.25-13.45 LUNCH

13.45-14.05 M. Pruzhinskaya  
"Dust free supernovae Ia and dark energy"

14.05-14.25 V. Stanishev  
"IFU spectroscopy of host galaxies of SNe Ia"

14.25-16.35 - LEARNING FROM SUPERNOVA REMNANTS

14.25-15.05 K. Long (invited)  
"Supernova Remnants and their Progenitors"

15.05-15.25 P. Ruiz-Lapuente  
"Survey for the binary progenitor of SN 1006"

15.25-15.55 Coffee Break

15.55-16.15 W. Kerzendorf  
"Type Ia progenitor hunt in ancient remnants"

16.15-16.35 A. Chiotellis  
"The impact of Type Ia progenitor systems on the observational properties of Type Ia supernovae and their remnants"

16.35-16.50 Saurabh Jha  
"Peculiar Type-Ia Supernovae: Constraining Progenitors and Explosion Models"

#### **Session 2: SYMBIOTIC BINARIES**

16.50-17.15 J. Mikolajewska (invited)  
"Symbiotic stars as possible progenitors of SNIa: System Parameters and Overall Outlook"

17.15-17.40 Jenő Sokoloski (invited)  
"Symbiotic stars as possible progenitors of SNIa: Accretion and Outflows"

17.40-18.00 S. Mohamed

18-18.20 Mystery object of the day  
S. Mereghetti  
"The progenitor of a Ia with a "short delay time"?"

***18.30 Reception at Caffè Pedrocchi: drinks, appetizers, cookies***

## **TUESDAY JULY 5**

### **8.50-10.20 SUPERSOFT X-RAY SOURCES – Moderator: Bob Kirshner**

Panelists: M. Gilfanov, M. Kato, R. Di Stefano, M. Orio, M. Nielsen, K. Lepo

M. Gilfanov  
"Supersoft X-ray Luminosity in External Galaxies"

K. Lepo  
"Ultra-Soft Sources as Type Ia progenitor candidates"

M. Nielsen  
"Obscuration of single degenerate type-Ia supernova progenitors in the

stellar winds of companion stars."

R. Di Stefano, M. Kato: Comments

10.20-10.50 Coffe Break

**10.50-15.30 THE EVOLUTION**

10.50-11.30 P. Marigo (invited)

"AGB evolution and the initial-final mass relation of single CO WD"

11.30-12.00 E. Garcia-Berro (invited)

"The formation and evolution of ONE white dwarfs: prospects for the AIC"

12.00-12.30 C. Tout (invited)

"White dwarf remnants of binary stars evolution"

12.30-13.45 LUNCH

13.45-14.05 N. Soker

"Double degenerate merging during the common envelope phase"

14.05-14.25 I. Hachisu

"A Single Degenerate Progenitor Model of Type Ia Supernovae Highly Exceeding the Chandrasekhar Mass Limit"

14.25-14.45 H. Ge

"Stellar Adiabatic Mass-loss model and its applications in common envelope evolution"

14.45-15.05 B. Gaensicke and D. de Martino

"Failed SNe Ia"

15.05-15.20 M. R. Schreiber

"Evidence for primary mass growth in Cataclysmic Variables"

15.20-15.25 poster presentations

15.25-15.55 Coffee Break

**15.55-18.25 CANDIDATE PROGENITORS I - NOVA ERUPTIONS"**

15.55-16.35 J. Jose (invited)

"Classical and recurrent nova models"

16.35 17.05 M. Kato (invited)

"Novae and Accreting WDs as SN Ia Progenitors"

17.05 17.45 R. Williams (invited)

"Inferences for CV evolution from spectroscopy"

17.45 -18.15

K. Page (invited)

"Swift observations of novae"

**20.45 STRINGS CONCERT, UNIVERSITY CONCERT HALL, Piazza Capitanato**

**WEDNESDAY JULY 6**

**8.50-13.30 CANDIDATE PROGENITORS 2 "COMPARISONS, AND THE RECURRENT NOVA PANEL"**

8.50-9.30 M. Livio (invited)  
"On SNe Ia progenitors"

9.30-10.00 M. Henze (invited)  
"Classical novae as supersoft X-ray sources in the Andromeda galaxy M31"

10.00-10.20 T. Rauch  
"White Dwarf Model Atmospheres"

10.20-10.50 G.C. Anupama (invited)  
"Recurrent Novae: What do we know about them?"

10.50-11.20 Coffee Break

**11.20-13.30 Recurrent Nova discussion. Moderator: Noam Soker**

15 min presentations by S. Starrfield, M. Bode, M. Orio, K. Mukai, D. Buckley

Comprehensive title (see individual abstracts in booklet):

"A new model (Starrfield) – and really new data (high and very high energy, high resolution spectra, the recent recurrent novae): how do they change the scenario?"

13.30-14.30 LUNCH

**14.45 Leaving for Verona, Return expected at 19.30**

**20.45 Mario Livio's public conference**

**THURSDAY JULY 7**

**9-12.05 CANDIDATE PROGENITORS 3 – "DOUBLE DEGENERATES AND... OBSERVATIONAL FACTS TO KEEP IN MIND"**

9.00-9.40 T. Marsh (invited)  
"Double White Dwarfs"

9.40-10.15 F. Valsecchi  
"Tidally-Induced Apsidal Precession in Double White Dwarfs: a new mass measurement tool with LISA" followed by

M. Benacquista & A. Stroeer  
"Detecting Double progenitors as SNe Ia with LISA"

10.15-10.45

**POSTERS PRESENTATIONS**

11.10-11.35 M. Kilic

"Double White Dwarf Mergers"

11.35-11.55 30 Mystery object of the day: A. Pagnotta

"Strong Evidence of a Double-Degenerate Progenitor for One Particular Type Ia Supernova"

**12.05-16.20 THE CONSTRAINTS FROM THE OBSERVATIONS**

11.55-12.35 F. Patat (invited)

"The connection between recurrent novae and some type Ia supernovae"

12.35-13.50 LUNCH

13.50-14.10 A. Sternberg

"Evidence for Circumstellar Material in Type Ia Supernovae via Sodium Absorption Features"

14.10-14.30 L. Chomiuk

"Constraints on the Progenitors of SNe Type Ia"

14.30-14.50 D. Townsley

"Making the Connection: Evaluating How Progenitor Properties Influence Type Ia Supernova Appearance"

14.50-15.10 E. Regos

"Progenitor Evolution and Dark Energy Time Variation from CLASH SNe Ia"

15.10-15.30 E. Voss

"Observational limits on the SNIa production in stellar clusters"

15.30-15.50 E. Scannapieco

"Constraining Models of Type Ia Supernova Progenitors"

15.50-16.10 C. Pritchett

"The Delay Time Distribution for Type Ia Supernovae from the SNLS Survey"

16.10-16.40 Coffee Break

**16.50 => FRIDAY: EXPLOSION MODELS**

16.40 17.20 K. Nomoto "Type Ia supernova models" (invited)

17.20 17.50 F. Roepke (invited)

"Thermonuclear supernova explosions from white dwarfs in different progenitor systems"

17.50 18.20 S. Sim (invited)

"Type Ia supernovae from sub-Chandrasekhar mass white dwarfs"

*19.20 Leaving by bus for Conference Dinner on the Colli Euganei*

**FRIDAY July 8**

**9 10.30 POPULATION SYNTHESIS ROUND TABLE (part 1)**

G. Nelemans (Invited) 25 min (questions during the discussion)  
"Double White Dwarfs"

N. Mennekens 15 min  
"Two distributions shedding light on supernova Ia progenitors:  
delay times and G-dwarf metallicities"

J. Clayes 15 min  
"Supernovae type Ia and the uncertainties in their progenitor evolution"

M. Moe 15 min  
"The effects of common envelope and tidal evolution on the rates of SNe Ia"

Discussion 20 min

10.30-11.00 Coffee Break

**11 12.30 POPULATION SYNTHESIS ROUND TABLE (part 2)**

L. Greggio 15 min

B. Wang 15 min  
"Helium star donor channel to type Ia supernovae and their surviving  
companion stars"

L. Piersanti 15 min  
"He-accreting CO WDs as possible progenitors of SNe Ia"

L. Yungelson 15 min  
"Type Ia Supernovae and Supersoft X-ray Sources"

Discussion 30 min

13.40 14 Di Stefano

14-15.10 Alternative models

F. Forster, R. Pakmor, C. Zhu, J. Guillochon, the titles in order are:

"Hydrostatic carbon burning in carbon oxygen white dwarfs"

"Thermonuclear supernovae from violent mergers of massive CO white dwarfs"

"Properties of CO White Dwarf Merger Remnants"

"Surface Detonations in Double Degenerate Binary Systems Triggered  
by Accretion Stream Instabilities"

Questions/Discussions at the end

15.10-16 MORE ON MYSTERY OBJECTS

15.10-15.30 Stella Kafka

"The changing nature of QU Car: SN Ia progenitor or a hoax?"

15.30-16.00 G. Tovmassian

"SDSS0018+3454: a CV, LMXB or Symbiotic Binary?"

**16.00-17.15 FINAL DISCUSSION: PLEASE STAY !!!**

20 minutes talks by 3 "Mystery Speakers", in addition to the audience, a panel of "leaders" in each field will ask them some questions