

SUPERNOVA REMNANTS III

AN ODYSSEY IN SPACE AFTER STELLAR DEATH

9-15 June 2024, Chania, Crete, Greece



POSTERS

1SLIDE/1MIN ORAL PRESENTATIONS

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G. Munoz-Sanchez (Greece)
D. Souropanis (Greece)
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Venue: Minoa Palace Resort & Spa (Imperial Main Hall)

A conference organized by the National Observatory of Athens, Greece

CONFERENCE POSTERS

1 SLIDE/1MIN ORAL PRESENTATIONS

MONDAY JUNE 10

Morning Session [10:50-11:00]
10 Poster Presentations - Session 1

Session 1: Populations/Surveys and Classifications of SNRs and SNe

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|-------|---------------------|---|
| S1.1 | F. Bocchino | GalRSG: A long-term monitoring campaign of Galactic Red Supergiants and the quest for SN explosions' premonitory signs |
| S1.2 | F. Bocchino | Search for Gamma-ray emission from SNRs in the Large Magellanic Cloud: Preliminary results of a new cluster analysis at energies above 3GeV |
| S1.3 | C. Burger-Scheidlin | Gamma-ray detection of newly discovered Ancora supernova remnant: G288.8-6.3 |
| S1.4 | A. Castrillo | Supernova remnant catalog in the PHANGS survey |
| S1.6 | B. Gamache | Characterization of M51 supernovae remnants with the imaging spectrometer SITELLE |
| S1.7 | D. A. Green | Statistics of Galactic Supernova Remnants |
| S1.8 | A. Ingallinera | Studying SNRs and their environment with high-resolution radio spectral index maps |
| S1.9 | A. Khokhriakova | SNR G321.3-3.9 observed with multi-band radio data and SRG/eROSITA |
| S1.10 | I. Leonidaki | Disentangling the evolutionary paths of Supernova Remnants: observational evidence of (non) multi-wavelength emission |
| S1.11 | I. Leonidaki | A systematic meta-analysis of physical parameters of Galactic SNRs |

Afternoon Session [16:05-16:20]
15 Poster Presentations - Sessions 1 & 2

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|-------|----------------------|--|
| S1.12 | T.-X. Luo | Investigation of Galactic supernova remnants and their environment in $26.6^\circ < l < 30.6^\circ$, $ b \leq 1.25^\circ$ using radio survey |
| S1.13 | S. Mantovanini | Low radio frequency images of the southern Galactic plane for supernova remnant detection |
| S1.14 | M. Michailidis | X-ray counterpart detection and gamma-ray analysis of the SNR G279.0+01.1 with eROSITA and Fermi-LAT |
| S1.16 | S. Panjkov | The Effects of Metallicity on the LMC Core-Collapse Progenitor Mass Distribution |
| S1.17 | N. O. Pinciroli Vago | DeepGraviLens: a multi-modal architecture for classifying gravitational lensing data |
| S1.18 | Z. Smeaton | Discovery of new, young Galactic SNR (G329.9-0.5) |

Session 2: SNe and SNRs with Circumstellar Interactions

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| S2.2 | R. Baer-Way | A multi-wavelength autopsy of a young interacting supernova to unveil its progenitor |
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SUPERNOVA REMNANTS III: AN ODYSSEY IN SPACE AFTER STELLAR DEATH

S2.3	M. Chatzopoulos	Radiative Transfer Modeling of Astrophysical Transients Powered by Circumstellar Interaction
S2.4	W.-Y. Chen	Multidimensional Radiation Hydrodynamics Simulations of Supernova 1987a Shock Breakout
S2.7	T. Court	Type Ia Supernova Remnants in Different Circumstellar Environments
S2.8	J. Horvat	An XMM-Newton study of several nonradiative filaments in the northeastern rim of the Cygnus Loop
S2.9	M. Ichihashi	The thermal relaxation process in collisionless shock of SN1006
S2.10	W. Jacobson-Galan	Final Moments: Observational Properties and Physical Modeling of “Flash Spectroscopy” Supernovae
S2.11	B. Liu	Investigation into SNR-accelerated CRs at the prospect of future MeV gamma-ray detectors
S2.12	L.-D. Liu	Light curves of Multiple Ejecta-circumstellar Medium Interactions

Afternoon Session [18:10-18:30] 20 Poster Presentations - Sessions 2 & 3

S2.13	E. Makarenko	How do supernova remnants cool? Morphology and optical emission lines
S2.15	A. Mercuri	Spectral Analysis of Chandra data on selected regions of the Supernova Remnant Cassiopeia A
S2.16	T. Murase	Molecular Clouds associated with middle-aged gamma-ray Supernova Remnants W41 and G22.7-0.2
S2.17	A. Nagy	How can circumstellar interaction explain the special light curve features of Type Ib/c supernovae?
S2.19	B. H. Pál	A possible circumstellar interaction of SN2004gq
S2.21	G. Prete	Interaction of a Supernova Remnant with background interstellar turbulence
S2.22	L. Sun	Probe charge exchange and resonant scattering in Magellanic Cloud supernova remnants with spatially-resolved high-resolution X-ray spectroscopic study of oxygen lines
S2.24	A. Suzuki	Multi-dimensional simulations of interaction-powered supernovae
S2.25	H. Suzuki	Global and Rapid Deceleration of X-Ray Knots and Rims of RCW 103
S2.26	K. Tsuge	Shocked Molecular Clouds in the LMC SNR N132D Revealed by ALMA ACA
S2.27	S. Ustamujic	Modeling the mixed-morphology supernova remnant VRO 42.05.01

Session 3: SN/SNR Progenitors, Central Engines, Explosion Models

S3.1	E. Abdikamalov	Exploring supernova gravitational waves with machine learning
S3.2	M. Anazawa	Estimation of progenitor of Keplers SNR with precision X-ray spectroscopic analysis
S3.4	B. Barna	Different, but still same: on the common(?) origin of the peculiar Type Iax SNe
S3.5	E. Batziou	The Long-time Evolution of Accretion-Induced Collapse of White Dwarfs to Neutron Stars
S3.6	Z. R. Bodola	Massive Progenitor Parade of Stripped-Envelope Supernovae

SUPERNOVA REMNANTS III: AN ODYSSEY IN SPACE AFTER STELLAR DEATH

- S3.7 A. Z. Bonanos Evidence for episodic mass loss in red supergiants from the ASSESS project
- S3.8 K. A. Bostroem Considering the Single and Binary Origins of the Type IIP SN 2017eaw
- S3.9 M. Bugli Numerical models of magneto-rotational supernovae: dynamics, multi-messenger signals, and explosive nucleosynthesis
- S3.10 M. Bugli 3D MHD core-collapse supernovae code comparison: the impact of numerics on central engine's simulations

TUESDAY JUNE 11

**Morning Session [10:55-11:00]
5 Poster Presentations - Session 3**

- S3.11 E. Christodoulou Obtaining accurate parameters of Type IIP progenitors in NGC 6822, IC 10 & WLM
- S3.12 L. Dang Typing supernova remnant G352.7-0.1 using XMM-Newton X-ray observations
- S3.13 B. Dinçel Possible pre-supernova binary companion to the progenitor of the supernova remnant IC 443
- S3.14 O. Eggenberger Andersen Black Hole Supernovae and their Equation-of-state Dependence
- S3.15 J. I. Gonzalez-Hernandez Searching for surviving stellar companions of historical galactic type Ia supernovae

**Afternoon Session [16:05-16:20]
15 Poster Presentations - Session 3**

- S3.16 A. Holas Electron-capture supernovae - Thermonuclear explosion or gravitational collapse? - The fate of sAGB stars on a knife's edge
- S3.17 C. M. Irwin An unexplored regime of shock breakout: the effect of rapid thermalization on the observed spectrum
- S3.18 M. Kalitsounaki Discovery of an extreme Red Supergiant in the LMC transitioning to a Blue Supergiant
- S3.19 E. Kasdagli Improving Supernova Prescriptions in Binary Population Synthesis Using Detailed Stellar Profiles
- S3.20 J. Luo 3D Simulation of SN~Ia SNR: Effects of Companion Star and Progenitor System
- S3.21 K. Matsunaga Formation of Mg-rich SNRs by shell merger and its effect on the explodability
- S3.22 G. Munoz-Sanchez [W60] B90: a mass-losing luminous RSG in the LMC interacting with the CSM
- S3.23 T. Narita Progenitor constraint with CNO abundances of circumstellar material in supernova remnants
- S3.24 Z. Niu The binary progenitor for Type IIP supernovae
- S3.25 C. Omand Probing Energetic Infant Pulsars with Supernova Emission Lines
- S3.26 K.-C. Pan Stellar Mass Black Hole Formation and Multimessenger Signals from Core-collapse Supernova Simulations
- S3.29 P. Ruiz-Lapuente SN Ia supernova remnant with M dwarf companions
- S3.30 R. Sawada '56Ni problem' in Canonical Supernova Explosion
- S3.32 M. Solar Binary progenitor systems for Type Ic supernovae

- S3.33 T. Tanaka Expansion Measurements of Tycho's Supernova Remnant and Their Implications of the Progenitor System

**Afternoon Session [18:10-18:30]
20 Poster Presentations - Sessions 3 & 4**

- S3.34 H. Uchida Possible evidence of a jet-induced explosion found from X-ray and radio observations of a peculiar SNR G0.61+0.01
S3.35 J. Weng Upper Limits of ^{44}Ti Decay Emission in Four Nearby Thermonuclear Supernova Remnants

Session 4: SNR Structure, Ejecta and Evolution

- S4.1 M. Agarwal X-ray diagnostics of Cassiopeia A's "Green Monster": evidence for dense shocked circumstellar plasma
S4.2 S. Akras Spectroscopic analysis tool for *intEgraL* field unit *daTacubEs* (SATELLITE): The case of SNR 0509-68.7
S4.4 Y. Chen A Monte-Carlo Simulation on Resonant Scattering of X-ray Line Emission in Supernova Remnants
S4.5 Y.-H. Chi Thermal X-ray Emission in the Western Half of the LMC Superbubble 30 Dor C
S4.6 P. Das Observational Study of the Reversed Shocked Ejecta in SNR 0509-67.5
S4.7 D. Dickinson High Resolution Mapping of the Unshocked Ejecta in Cassiopeia A
S4.8 M. Fontaine Theoretical and Experimental Simulations of Colliding Blast Waves
S4.9 B. Giudici Hydrodynamic instabilities in three-dimensional simulations of neutrino-driven CCSNe from red supergiant progenitors
S4.10 R. Giuffrida Measuring the initial mass of ^{44}Ti in SN 1987A through the ^{44}Sc emission line
S4.11 L. Godinaud Mapping the 3D dynamics and spectral properties of Tycho's SNR in X-rays
S4.12 T. Ko The multi-layer structure of SNR 1181 with a white dwarf in its center
S4.14 D. Leahy On emission measures and element densities and masses inferred from XSPEC
S4.15 D. Leahy Models for supernova remnants with reverse shock emission
S4.16 E. Makarenko Thermal X-ray emission from supernova remnants in 3D (M)HD simulations
S4.17 S. Mandal Measurement of anisotropies in observed Supernova Remnants and their interpretation using hydrodynamical models
S4.18 M. Ono Molecular formation in the ejecta of SN 1987A based on three-dimensional hydrodynamical models
S4.19 S. Panjkov Morphological Insights into the SN progenitors of the Small Magellanic Cloud
S4.20 G. Payli Investigation of supernova remnant IC 443 and G189.6+3.3 with LAMOST

WEDNESDAY JUNE 12

Morning Session [10:55-11:00]

5 Poster Presentations - Session 4

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| S4.21 | L. Romano | Cloud Formation by Supernova Implosion |
| S4.22 | V. Sapienza | Probing Shocked Ejecta in SN 1987A: A novel diagnostic approach using XRISM-Resolve |
| S4.23 | N. Sanches Sartorio | New Analytical Solutions for Supernova Shocks |
| S4.24 | L. Sun | Evolution of X-ray Gas in SN 1987A from 2007 to 2021: Ring Fading and Ejecta Brightening Unveiled through Differential Emission Measure Analysis |
| S4.25 | J. C. Toledo-Roy | Simulated non-thermal emission of the supernova remnant G1.9+0.3 |

THURSDAY JUNE 13

Morning Session [10:55-11:00]

5 Poster Presentations - Sessions 4 & 5

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| S4.27 | B. van Baal | Nebular Phase Stripped Envelope Supernovae in 3D |
| S4.28 | K. Vargas Rojas | Study of non-thermal emission of Kepler's SNR with MHD numerical simulations. |

Session 5: Shock Physics, Particle Acceleration, Polarization in SNRs and PWNe

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| S5.2 | B. Ball | Radio Polarization Studies of Galactic Supernova Remnants with ASKAP |
| S5.3 | D. Castro | The Expansion and Width of the Synchrotron Filaments Associated with the Forward Shocks of SNRs |
| S5.4 | L. Del Zanna | Relativistic MHD turbulence simulations and synchrotron polarization properties of Pulsar Wind Nebulae |

Afternoon Session [16:05-16:20]

15 Poster Presentations - Sessions 5 & 6

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|-------|---------------|---|
| S5.5 | R. Ferrazzoli | Discovery of a shock-compressed magnetic field in the NW rim of the young SNR RX J1713.7-3946 with X-ray polarimetry |
| S5.6 | R. Giuffrida | Evidence for proton acceleration and escape from the Puppis A SNR using Fermi-LAT observations |
| S5.8 | J. Hewitt | Resolving the gamma-ray supernova remnant IC 443 with Fermi LAT and VERITAS |
| S5.9 | J. Hewitt | Two new radio-dim, gamma-ray-bright supernova remnants |
| S5.10 | S. Knežević | Shock geometry and physics in the supernova remnant SNR 0509-67.5 |
| S5.12 | Y. Ohshiro | A self-consistent model of shock-heated plasma in non-equilibrium states for direct parameter constraints from X-ray observations |
| S5.13 | V. Sapienza | Time evolution of the synchrotron X-ray emission in Kepler's SNR: the effects of turbulence and shock velocity |

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- S5.14 X. Shi The production of unstable cosmic-ray isotopes in supernovae clusters
- S5.15 J. D. Slavin Modeling Shock Emission Including Dust Destruction
- S5.16 K. Stasiewicz Reinterpretation of the Fermi acceleration of cosmic rays in terms of the ballistic surfing acceleration in supernova shocks
- S5.17 S. J. Tanaka A Self-regulated Stochastic Acceleration Model of Pulsar Wind Nebulae
- S5.18 D. Tateishi Suzaku/XIS study of the acceleration environment of bilateral SNR RX J0852.0-4622
- S5.19 S. Ustamujic Modeling the supernova remnant RX J1713.7 – 3946: particle acceleration, gamma-ray emission, and neutrino flux

Session 6: SN/SNR dust, environments, feedback

- S6.1 N. Izumi CI/CO abundance ratio of shock-excited gas in the Magellanic Supernova Remnant N63A
- S6.3 N. Sanches Sartorio The impact of CSM properties on the dust destruction by supernovae forward shocks

Afternoon Session [18:05-18:30] 25 Poster Presentations - Sessions 6, 7, 8 & 9

- S6.5 T. Scheffler Dust destruction by supernova remnant forward shocks in a turbulent interstellar medium
- S6.6 A. Singleton Constraining the progenitor properties of the Type Ib supernova iPTF13bvn through its environment with HST and MUSE
- S6.7 D. Souropanis Time-dependent feedback of core-collapse supernovae from binary progenitors via detailed binary population synthesis models
- S6.8 T. Tu A Yebes W band Line Survey towards an Unshocked Molecular Cloud of Supernova Remnant 3C391: Evidence of Cosmic-Ray-Induced Chemistry
- S6.10 M. Zhang Not gone with the wind: survival of high-velocity molecular clouds in the Galactic Centre
- S6.11 Q. Zhang A molecular line survey toward clumps G and E in supernova remnant IC 443 with the Submillimeter Array
- S6.12 Z. Zhang Estimation of the Dust Mass with Infrared Emission and Extinction of the Supernova Remnants: G156.2+5.7, G109.1-1.0, G166.0+4.3, G93.7-0.2
- S6.13 S. Zsíros Disentangling possible dust components of core-collapse supernovae within a Bayesian framework

Session 7: PWN Diversity; Structures, Bowshocks and Magnetar Wind Nebulae

- S7.1 J. Alford Cosmic Ray Leptons Escaping from CTA 1?
- S7.3 L. V. da Conceição Using CFHT's SIELLE to probe the long-sought shell in the Crab nebula
- S7.4 S. Gagnon Chandra X-ray Observations of PSR J1849-0001 and its Pulsar Wind Nebula
- S7.5 X. Li An Exploration of Misaligned Outflows in Pulsar Wind Nebulae
- S7.6 S. Mandal Diagnosis of Pulsar Wind Nebula dynamics using their filamentary structure
- S7.7 K. Yan Pulsar halos as an origin of the Galactic diffuse TeV-PeV emission: Insight from LHAASO and IceCube

Session 8: SNRs and PWNe as PeVatrons

S8.1	R. Brose	Fast Blue Optical Transients as cosmic-ray sources
S8.3	Y. Gallant	Pulsar Wind Nebulae and their halos observed in TeV and PeV gamma rays
S8.5	Y. Li	Multi-Messenger Modeling of the Monogem Pulsar Halo
S8.6	B. Mac Intyre	The Manatee Nebula W50-SS433: a Galactic PeVatron?
S8.7	I. Sander	Pulsar Wind Nebulae and PeVatrons: A Case Study of PWN G309.92-2.51
S8.8	N. Tsuji	Search for molecular clouds associated with PeVatrons by the Nobeyama 45-m radio telescope: the case of LHAASO J0341+5258
S8.9	J. Woo	Revisiting Cassiopeia A after a decade: the first spatially resolved synchrotron X-ray variability above 15 keV by NuSTAR

Session 9: SNR/PWN/Compact Objects Associations, Interaction and Evolution

S9.1	J. Ahlvind	Late-time X-ray observations Core-Collapse Supernovae - constraints on emission from compact objects and CSM interaction
S9.2	A. M. Moaz	Multi-Wavelength Modelling of the Pulsar Wind Nebulae Kes 75 & HESS J1640-465
S9.3	J. Suherli	A-MUSE-ing Views of the Central Environment of the Vela Jr. and 1E0102-72.3 Supernova Remnants



