

# SUPERNOVA REMNANTS II

AN ODYSSEY IN SPACE AFTER STELLAR DEATH

3-8 June 2019, Chania, Crete, Greece



## PROGRAM BOOK

### **Scientific Organizing Committee:**

P. Boumis (Greece, co-chair)  
P. Slane (USA, co-chair)  
E. Amato (Italy)  
W. Blair (USA)  
G. Dubner (Argentina)  
R. Fesen (USA)  
C. Fryer (USA)  
J. Hughes (USA)  
H. Lee (Japan)  
D. Milisavljevic (USA)  
J. Raymond (USA)  
S. Safi-Harb (Canada)

### **Local Organizing Committee:**

P. Boumis (Greece, co-chair)  
A. Bonanos (Greece, co-chair)  
D. Abartzi (Greece)  
A. Chiotellis (Greece)  
S. Derlopa (Greece)  
M. Kopsacheili (Greece)  
I. Leonidaki (Greece)  
A. Manousakis (UAE)  
G. Maravelias (Greece)  
E. Paraskeva (Greece)  
M. Pliatsika (Greece)  
Z.T. Spetsieri (Greece)  
M. Yang (Greece)

**Venue: Minoa Palace Resort & Spa (Imperial Main Hall)**

*A conference organized by the National Observatory of Athens, Greece*

## CONFERENCE PROGRAM

### Sunday June 02

16:00 – 18:30 Registration  
20:30 – 00:00 **Welcome Reception** @ beach area of Minoa Palace Resort

### Monday June 03

07:45 – 08:30 Registration

#### **Morning Session** (Chair: G. Dubner)

08:30 – 08:40 P. Boumis/P. Slane Welcome  
08:40 – 09:20 J. Raymond (Opening Plenary) Understanding SNRs and Galaxies

#### **Session 1: Observations and Classifications of SNe and SNRs**

09:20 – 10:00 D. Patnaude What do we learn from X-ray observations of SNe and SNRs  
10:00 – 10:20 R. Fesen The velocity and dynamical effects of Cas A's reverse shock  
10:20 – 10:40 P. Plucinsky The expansion of the forward shock of 1E 0102.2-7219 in X-rays  
10:40 – 11:00 F. Sutaria A deep, UV, imaging study of the Cygnus SNR  
11:00 – 11:30 **Coffee Break & Poster Viewing**  
11:30 – 12:10 M. Modjaz SN classification and diversity: the case of Stripped CCSNe  
12:10 – 12:30 T. Holoien Insights into the Local SN population from ASAS-SN  
12:30 – 12:50 G. Terreran Very late-time observations of stripped envelope SNe and evidences for the presence of a PWN  
12:50 – 13:10 F. P. A. Vogt Revealing the environment of central compact objects with optical integral field spectroscopy: E0102, Vela Jr., and friends  
13:10 – 14:40 **Lunch**

**Afternoon Session** (Chair: W. Blair)

14:40 – 15:00      N. Hurley- Walker      27 new SNRs found using the Murchison Widefield Array

**Session 2: SN/SNR Progenitors: Models and Observations**

15:00 – 15:40      N. Smith      The diversity in pre-SN evolution and mass loss of massive stars  
15:40 – 16:00      K. Nomoto      Pre-SN mass ejections in pulsational pair-instability SNe and electron-capture SNe, and connections to super-luminous SNe and fast-evolving luminous transients  
16:00 – 16:20      D.A. Howell      Pulsational and non-pulsational pair-instability SNe and their remnants  
16:20 – 16:50      **Coffee Break & Poster Viewing**  
16:50 – 17:30      J. Murphy      Toward predicting and constraining the explosions of massive stars  
17:30 – 17:50      A. J. Ruitter      Type Ia SN subclasses and their progenitors  
17:50 – 18:10      P. Ruiz-Lapuente      Search of possible surviving companions in SNe Ia remnants to determine the nature of the explosions  
18:10 – 18:30      1slide/1min      Poster Presentations - Sessions 1 & 2

**Tuesday June 04**

**Morning Session** (Chairs: H. Lee / C. Fryer)

**Special Session: JWST – SNRs/SNe**

09:00 – 09:40      W. Blair      JWST is on the Horizon: Is our community ready?

**Session 2: SN/SNR Progenitors: Models and Observations**

09:40 – 10:00      J. Anderson      A meta analysis of core-collapse SNe  $^{56}\text{Ni}$  masses  
10:00 – 10:20      B. Barna      Chemical stratification of type Iax SNe

**Session 3: Supernova Explosion Mechanisms**

10:20 – 11:00      H.-T. Janka      3D core-collapse SN modeling and applications to Cas A and other SNRs

11:00 – 11:30	<b>Coffee Break &amp; Poster Viewing</b>	
11:30 – 12:10	M. Bersten	Hydrodynamical models of core-collapse SNe and shock breakout
12:10 – 12:30	S. Gronow	A sub-Chandrasekhar mass white dwarf as possible progenitor for a thermonuclear explosion
12:30 – 12:50	S.-C. Leung	Extracting type Ia SN explosion mechanisms by its nucleosynthesis yields
12:50 – 13:10	R. Sawada	Nucleosynthesis constraints on the energy growth timescale of a core-collapse SN explosion

13:10 – 14:40      **Lunch**

**Afternoon Session** (Chair: S. Reynolds)

**Session 4: Shock Physics and Particle Acceleration in SNRs**

14:40 – 15:20	D. Caprioli	Acceleration at SNR shocks: state of the art and challenges
15:20 – 15:40	M. Miceli	Measuring the post-shock temperatures of heavy ions in SN 1987A
15:40 – 16:00	R. Bandiera	Interplay between physics and geometry in Balmer filaments
16:00 – 16:20	N. Tsuji	Constraint on diffusion coefficient at SNR shock using nonthermal X-ray and gamma-ray observations

16:20 – 16:50      **Coffee Break & Poster Viewing**

16:50 – 17:30	A. Bamba	Observational study of nonthermal phenomena on SNR shocks
17:30 – 17:50	J. Vink	The strange behavior of the reverse shock of Cas A
17:50 – 18:10	D. Castro	The expansion and width of the synchrotron filaments associated with the forward shock of Cas A
18:10 – 18:30	1slide/1min	Poster Presentations - Sessions 3, 4, 5, 6 & 7

**Wednesday June 05**

**Morning Session** (Chairs: D. Milisavljevic / P. Slane)

**Session 5: Supernova Ejecta and Dust**

09:00 – 09:40	B. Williams	What we can learn from ejecta in SNRs
---------------	-------------	---------------------------------------

SUPERNOVA REMNANTS II: AN ODYSSEY IN SPACE AFTER STELLAR DEATH

- 09:40 – 10:00 M. Arias The unshocked ejecta in Cas A and Tycho through low-frequency radio absorption  
10:00 – 10:20 A. Wongwathanarat A three-dimensional core-collapse SN model resembling Cas A  
10:20 – 10:40 I. Seitenzahl Type Ia SNR tomography  
10:40 – 11:00 P. Ghavamian Rings of metal-rich ejecta in Puppis A: hints of a SN interaction in a binary?

11:00 – 11:30 **Coffee Break & Poster Viewing**

- 11:30 – 12:10 M. Barlow (on behalf of H. Gomez) Supernova dust factories  
12:10 – 12:30 M. Matsuura ALMA, VLT and SOFIA observations of SN 1987A  
12:30 – 12:50 F. Schmidt Hydrodynamic simulations of SNRs: Dust destruction by the reverse shock  
12:50 – 13:10 H. Chawner Dusty SNRs in our Galactic plane

**Session 6: Pulsar Wind Nebulae**

- 13:10 – 13:50 T. Temim Progenitors and evolution of composite SNRs

13:50 – 14:00 **Conference Photo**

15:30 – 22:30 **Excursion #1: Tour to the Ancient Olive Tree of Vouves, Karavitakis Winery & Phalasarna beach**

- 15:30 Buses depart from Minoa Palace & Euphoria Resorts  
22:30 Buses arrive to Minoa Palace & Euphoria Resorts

**Thursday June 06**

**Morning Session (Chairs: P. Slane / S. Safi-Harb)**

- 09:00 – 09:40 M.-H. Grondin Gamma-ray observations of PWNe  
09:40 – 10:00 M. Kerr The tail of PSR J0002+6216 and the SNR CTB1  
10:00 – 10:20 J. D. Gelfand Probing extreme physics with PWNe  
10:20 – 10:40 M. Filipovic Discovery of a pulsar-powered bow shock nebula in the SMC SNR DEM S5  
10:40 – 11:00 B. Guest Spectral index maps of PWNe

11:00 – 11:30 **Coffee Break & Poster Viewing**

**Session 7: SNRs and Their Galaxies**

- 11:30 – 12:10 K. Long What are we learning from SNR samples in nearby galaxies?  
12:10 – 12:30 M. Kopsacheilli Study of extragalactic SNRs

12:30 – 12:50	S. K. Sarbadhicary	Observational tests of momentum feedback by SNRs in M31
12:50 – 13:10	R. Diesing	Effect of cosmic rays on SNR evolution
13:10 – 14:40	<b>Lunch</b>	

**Afternoon Session** (Chairs: S. Safi-Harb / J. Vink)

14:40 – 15:20	I. Leonidaki	SNR populations in our Galaxy and beyond: bridging the gap
---------------	--------------	--

**Session 8: Magnetic Fields in SNRs and PWNe**

15:20 – 16:00	B. Olmi	Modeling PWNe and their magnetic fields
16:00 – 16:20	P. Velazquez	MHD simulations of SNRs in magnetized medium
16:20 – 16:50	<b>Coffee Break &amp; Poster Viewing</b>	
16:50 – 17:30	S. Reynolds	Magnetic fields in SNRs: observational inferences
17:30 – 17:50	S. Loru	New high-frequency radio observations of the Cygnus Loop SNR
17:50 – 18:10	R. Kothes	Revealing the nature of the unusual PWN CTB87
18:10 – 18:30	1slide/1min	Poster Presentations - Sessions 8, 9 & 10
20:00	Buses depart from Minoa Palace Resort to Neorio Moro, Venetian Port of Chania	
20:30 – 23:30	<b>Conference Banquet</b> @ Neorio Moro Restaurant	
23:30	Buses depart from Neorio Moro to Minoa Palace Resort	

**Friday June 07**

**Morning Session** (Chairs: R. Fesen / J. Raymond)

**Session 9: Jets and Asymmetries in SNe and Their Remnants**

09:00 – 09:40	L. Lopez	The morphologies and kinematics of SNRs
09:40 – 10:00	C. Law	A three-dimensional kinematic reconstruction of SNR N132D's high-velocity, oxygen-rich ejecta
10:00 – 10:20	T. Holland-Ashford	Asymmetries of heavy elements in Cas A
10:20 – 10:40	A. Picquenot	Revisiting the ejecta asymmetries in Cas A with a novel method for component separation in X-rays

SUPERNOVA REMNANTS II: AN ODYSSEY IN SPACE AFTER STELLAR DEATH

- 10:40 – 11:00 T. Kasuga Doppler velocity measurement of Fe ejecta in Kepler's SNR
- 11:00 – 11:30 **Coffee Break & Poster Viewing**
- 11:30 – 12:10 S. Orlando Investigating asymmetries of SNRs through 3D long-term SN-SNR simulations

**Session 10: SNe and SNRs with circumstellar interactions**

- 12:10 – 12:50 R. Margutti Changing look Supernovae  
12:50 – 13:10 J. Larsson HST observations of SN1987A in its early thirties
- 13:10 – 14:40 **Lunch**

**Afternoon Session (Chair: J. Raymond)**

- 14:40 – 15:20 S. Katsuda SNRs interacting with circumstellar medium  
15:20 – 15:40 A. Chiotellis On the interaction of type Ia SNRs with PNe  
15:40 – 16:00 C. Fransson The circumstellar media of superluminous SNe  
16:00 – 16:20 B.-C. Koo Dense circumstellar knots in the Cas A SNR
- 16:20 – 16:50 **Coffee Break & Poster Viewing**
- 16:50 – 17:10 K. E. Weil The optically inferred circumstellar environment of Cas A  
17:10 – 17:30 M. Dopita\* Calibrating interstellar abundances using SNR radiative shocks - \*In his memory, who passed away on Dec 22, 2018 - by I. Seitenzahl  
17:30 – 18:10 R. Chevalier (Closing Plenary) SNR research: Where do we stand?  
18:10 – 18:30 P. Slane Closing Remarks

**Saturday June 08**

- 08:30 – 20:00 **Excursion#2: Full-day excursion to Exotic Elafonisi beach & to Cretan Brewery "Charma"**  
Buses depart/arrive from/to Minoa Palace/Euphoria Resort

**END OF CONFERENCE**



## CONFERENCE POSTERS

### Session 1: Observations and Classifications of SNe and SNRs

- |       |                   |   |
|-------|-------------------|---|
| S1.1  | C. Braun          | An X-ray Imaging and Spectroscopic Study of the Supernova Remnant RCW 103 Using Chandra and XMM-Newton                                      |
| S1.2  | J. Devin          | Fermi-LAT observations of the surprising SNR G150.3+4.5   |
| S1.3  | R. Fesen          | Discovery of Extensive Optical Emission from the Extremely Radio Faint Galactic Supernova Remnant G182.4+4.3                                |
| S1.4  | M. Filipovic      | Supernova Remnants in the Multi-Messenger Era   |
| S1.5  | V. Fragkou        | Deep Optical Study of the Supernova Remnant G132.7+1.3  |
| S1.6  | D. Green          | An updated catalogue of Galactic SNRs and some statistics   |
| S1.7  | É. J Harvey       | Supernovae with the New Robotic Telescope   |
| S1.8  | N. Hurley-Walker  | Galactic and Extragalactic All-sky MWA Survey - eXtended  |
| S1.9  | A. Ingallinera    | ASKAP observations of known and new Galactic SNRs   |
| S1.10 | P. Kostić         | Test observations of galactic supernova remnant G67.7+1.8 with 1.4m telescope Milanković at Astronomical Station Vidojevica, Serbia         |
| S1.11 | J. A. Kypriotakis | Mapping the Physical Properties of Supernova Remnants in our Galaxy   |
| S1.12 | C. D.-J. Lin      | Searching for Balmer-Dominated Type Ia SNRs in M33  |
| S1.13 | D. Milisavljevic  | Evidence for a Pulsar Wind Nebula in the Type Ib Peculiar Supernova SN 2012au   |
| S1.14 | I. Moumen         | 3D Optical Spectroscopic Study of NGC 3344 with SITELE: I. Identification and Confirmation of Supernova Remnants                            |
| S1.15 | D. Onic           | Revealing the radio continuum and X-ray properties of the Galactic supernova remnant G5.9+3.1 with Murchison Widefield Array and XMM-Newton |
| S1.16 | P.-S. Ou          | Structures of M33 Supernova Remnants Revealed by Broad-Band HST Images  |
| S1.17 | E. Paraskeva      | Early high-cadence monitoring of supernovae: key to identifying the progenitors   |
| S1.18 | A. Rest           | Light Echoes of Ancient Transients  |
| S1.19 | A. M. Ritchey     | Physical Conditions in Shocked Interstellar Gas Interacting with the Supernova Remnant IC 443   |
| S1.20 | M. Rosado         | Optical counterparts of Galactic Supernova Remnants and their kinematic distances   |
| S1.21 | S. Safi-Harb      | A New Version of SNRcat: the High Energy Catalogue of Supernova Remnants  |
| S1.22 | Z. Spetsieri      | Supernovae, transients and high amplitude variables in the Hubble Catalog of Variables  |
| S1.23 | K. E. Weil        | The Cygnus Loop's Distance, Properties & Environment Driven Morphology  |
| S1.24 | J. West           | G182.5-4.0: A new supernova remnant near the Crab nebula  |



- S1.25 P. Zhou Asymmetric Type-Ia supernova origin of W49B as revealed from spatially resolved X-ray spectroscopic study

**Session 2: SN/SNR Progenitors: Models and Observations**

- S2.1 J. Anderson The lowest metallicity type II supernova from the highest mass red supergiant progenitor
- S2.2 B. Barna Spectral signs of  $^{56}\text{Ni}$  in the outer ejecta of SNe Ia
- S2.3 F. Bocchino A Virtual Reality environment for scientific exploitation of 3D MHD Astrophysical Simulations
- S2.4 P. Chandra Electron Cyclotron Maser Emission revealed in magnetic massive stars
- S2.5 C.-H. Chen Searching for Fast Runaway Massive Stars in Core-Collapse SNRs in the LMC
- S2.6 M. Diaz-Rodriguez Progenitor Mass Distribution for Core-Collapse Supernova Remnants
- S2.7 J. I. Gonzalez-Hernandez Searching for stellar companions of Galactic type-Ia Supernovae with HST and Gaia
- S2.8 T. Jacovich A Grid of Core Collapse Supernova Remnant Models Evolved from Massive Progenitors
- S2.9 J. Kuuttila Excluding SSSs as progenitors for four Type Ia supernovae in the LMC
- S2.10 S.-H. Lee Cradle-to-grave models for core-collapse supernova remnants and machine learning
- S2.11 C.-J. Li Searching for Surviving Companions of Type Ia SNe in Five Balmer-Dominated SNRs in the LMC
- S2.12 W. Li Constraints on the ejecta properties of SN 2018oh with early excess emission from K2 Observation
- S2.13 G. Maravelias Identifying massive stars in nearby galaxies, in a smart way
- S2.14 P.-S. Ou Is There a Critical Metallicity of Mass Loss in Massive Star Evolution?
- S2.15 R. Ouchi Constraining massive star activities in the final years through properties of supernovae and their progenitors
- S2.16 L. Sun Spatially Resolved X-Ray Spectroscopy of Kepler's Supernova Remnant: Distinct Properties of the Circumstellar Medium and the Ejecta
- S2.17 A. Tutone 3D MHD simulations from the onset of the SN to the full-fledged SNR: role of ejecta clumps on matter mixing
- S2.18 A. Yalinewich The Signature of a Windy Radio Supernova Progenitor in a Binary System
- S2.19 M. Yang Evolved Massive Stars at Low-metallicity: A Source Catalog for the Small Magellanic Cloud

**Session 3: Supernova Explosion Mechanisms**

S3.1	D. Alp	X-Ray and Gamma-Ray Emission from 3D Neutrino-Driven SN Simulations and Comparisons With Observations of SN 1987A
S3.2	C. Fryer	Radioactive Isotopes in Core-Collapse Remnants
S3.3	F. Lach	Type Ia Supernovae from Deflagrations of Chandrasekhar Mass White Dwarfs
S3.4	S. Nagataki	From the (thermonuclear) supernova to the supernova remnant
S3.5	T. Takiwaki	Simulation of an Ultra-stripped Type Ic Supernova

**Session 4: Shock Physics and Particle Acceleration in SNRs**

S4.1	F. Acero	Understanding gamma-ray emission of RX J1713.7-3946
S4.2	F. Acero	Beyond the non-thermal emission of RX J1713.7-3946: first results from the XMM-Newton Large Program
S4.3	B. Arbutina	Non-linear diffusive shock acceleration: A recipe for electron injection
S4.4	A. Bohdan	Physics of nonrelativistic perpendicular shocks of young supernova remnants: electron injection, energy redistribution and magnetic turbulences
S4.5	P. Dell'Ova	Stellar and interstellar content of the region interacting with cosmic rays in IC443G
S4.6	V. Domček	Synchrotron radiation in Cas A: the non-linear connection
S4.7	P. Kostić	Hydrodynamical simulations of supernova remnant in fractal interstellar medium: morphology of the shock-wave
S4.8	M. Lemoine-Goumard	Efficient particle acceleration from HESS J1640.6-4633 and the PeVatron candidate HESS J1641.0-4619
S4.9	N. Maxted	The gas structure towards supernova remnants suspected of cosmic-ray acceleration
S4.10	M. Pais	Constraining the coherence scale of the interstellar magnetic field using TeV gamma-ray observations of supernova remnants
S4.11	A. Pellizzoni	Challenging electron populations, magnetic fields and acceleration models in Supernova Remnants shocks through high-frequency single-dish radio observations
S4.12	H. Sano	Shock-cloud interactions in young gamma-ray supernova remnants: Evidence for cosmic-ray acceleration
S4.13	J. Shimoda	Polarized Balmer line emission from SNR shocks: on the effects of cosmic-ray acceleration
S4.14	I. Sushch	The impact of the circumstellar magnetic field of progenitor stars on the resulting gamma-ray spectrum of supernova remnants
S4.15	I. Sushch	Non-thermal emission from the reverse shock of the youngest galactic Supernova remnant G1.9+0.3

S4.16	H. Suzuki	A systematic study on escaping of cosmic rays from SNR shocks through observations of thermal X-ray plasmas
S4.17	M. Vučetić	Proper motion of Cygnus loop filaments
S4.18	R. Yamazaki	Toward the generation of magnetized collisionless shocks with high-energy lasers
S4.19	V. Zekovic	Quasi-parallel collisionless shock (re)formation and particle acceleration by (non)resonant micro-instabilities
S4.20	H. Zeng	Evolution of high-energy particle distribution in Supernova Remnants
S4.21	X. Zhang	Is Supernova Remnant Cassiopeia A a PeVatron?

### **Session 5: Supernova Ejecta and Dust**

S5.1	M. Barlow	Massive Amounts of Cold Dust in Small Magellanic Cloud Supernova Remnant 1E 0102-7219
S5.2	A. Bevan	Dust formation rates and locations in interacting SNe
S5.3	F. Bocchino	Ejecta fragments and protrusions in and around SN1006
S5.4	E. Greco	Studying the radiative recombination continua in the X-ray spectra of pure ejecta and of overionized plasmas
S5.5	F. Kirchsclager	Dust destruction by the reverse shock in Cas A
S5.6	Y.-H. Lee	Near-Infrared Multi-Object Spectroscopy of the Outer Ejecta Knots in Cassiopeia A
S5.7	M. Niculescu-Duvaz	Spatially resolved models of the dust in Cassiopeia-A using DAMOCLES
S5.8	F. D. Priestley	Revisiting the Crab Nebula's dust and synchrotron radiation from the infrared to radio domain
S5.9	F. D. Priestley	The survivability of newly-formed dust grains in SNRs
S5.10	J. Slavin	Survival of Dust Created in Cas A Supernova Remnant
S5.11	L. Shingles	Late-phase radiative transfer of Type Ia supernovae
S5.12	R. Wesson	Dust in the remnant of SN 1995N
S5.13	E. Dwek	The evolution of dust in SN ejecta

### **Session 6: Pulsar Wind Nebulae**

S6.1	Y. Bao	Interpreting the GeV-TeV Gamma-ray Emission of the Vela X Pulsar Wind Nebula
S6.2	G. Castelletti	A new radio look of the pulsar wind nebula 3C 58
S6.3	Y. A. Gallant	Pulsar Wind Nebulae observed in TeV gamma-rays and their Galactic environments
S6.4	E. Giacani	New X- ray observations towards the pulsar PSR J1826-1256
S6.5	S. Hattori	NuSTAR Properties of G21.5-0.9
S6.6	J. Lee	Rapid X-Ray Variations of the Geminga Pulsar Wind Nebula
S6.7	B. Olmi	Middle aged PWNe: Hints on the reverberation process
S6.8	C. Omand	Submillimetre Constraints on the Pulsar-Driven SN Model

S6.9	S. Park	Spectral Nature of Quiescent X-ray Emission from SGR 0526-66 in the LMC
S6.10	S. Safi-Harb	The X-ray Evolution of the PWN in the SNR Kes 75
S6.11	S. Tanaka	Dynamics of Pulsar Wind Nebula with Magnetic Dissipation and Turbulence

### **Session 7: SNRs and Their Galaxies**

S7.1	W. P. Blair	The Fireworks Galaxy, NGC 6946: Looking at the Fading Embers
S7.2	J. Bruursema	A UKIRT [FeII] Study of M33 and its Supernova Remnants
S7.3	B.-C. Koo	Supernova Remnants and Supernova Feedback
S7.4	D. Leahy	Applying models with reverse shocks to Galactic supernova remnants in the VGPS survey.
S7.5	D. Leahy	Using MHD simulations to construct analytical models for supernova remnant evolution
S7.6	M. Michałowski	What can we learn about SNe from atomic gas in their environments?
S7.7	I. Moumen	O CEASAR: The Optical Catalogue of Extragalactic Supernova Remnants
S7.8	H. Sano	ALMA view of the molecular clouds associated with the Magellanic SNRs
S7.9	S. Sarbadhicary	Deep, systematic radio-based surveys of supernova remnants in M31 and Magellanic Clouds

### **Session 8: Magnetic Fields in SNRs and PWNe**

S8.1	A. Moranchel-Basurto	Asymmetries in the emission from young supernova remnants: The case of Tycho
S8.2	P. Slane	X-ray Polarization in Supernova Remnants

### **Session 9: Jets and Asymmetries in SNe and Their Remnants**

S9.1	E. Greco	Discovery of a jet-like structure with overionized plasma in the SNR IC 443
S9.2	M. Millard	Measuring Ejecta Velocities in Tycho's and Kepler's Supernova Remnants with the Chandra HETGS
S9.3	T. Nagao	An extended aspherical explosion of a core-collapse supernovae
S9.4	A. Suzuki	Supernova ejecta with a powerful central engine
S9.5	S. Ustamujic	Three-dimensional MHD modeling of SNR IC 443: effects of the inhomogeneous medium in shaping the remnant morphology
S9.6	F. Vogt	Exploring the scientific potential of Virtual Reality for observational astrophysics with SNR 1E 0102.2-7219

**Session 10: SNe and SNRs with circumstellar interactions**

S10.1	C. Abate	What is the role of wind mass transfer in the progenitor evolution of Type Ia Supernovae?
S10.2	M. Arias	The Circumstellar and Interstellar Environment of VRO 42.05.01, A Peculiar Mixed Morphology SNR
S10.3	P. Boumis	Optical study of the peculiar SNR G 166+4.3 (VRO)
S10.4	A. Chiotellis	VRO 42.04.01: A supernova remnant resulting by a supersonically moving Wolf Rayet progenitors star
S10.5	S. Derlopa	SNR VRO (G 166.0 +4.3) 3-D morpho-kinematical model
S10.6	P. Chandra	Revealing inhomogeneities in supernovae shocks and their environments via low frequency radio observations
S10.7	É. J. Harvey	A recurrent nova super-remnant in the Andromeda galaxy
S10.8	M. Katsuragawa	Time-dependent hydrodynamic model of X-ray emitting plasma in evolved SNRs for high resolution X-ray spectroscopy
S10.9	H.-G. Lee	Near-infrared imaging and spectroscopic observations of supernova remnants in M33
S10.10	Q.-C. Liu	MCs toward SNR W50/SS 433
S10.11	H. Matsumura	Suzaku X-ray Observations of Galactic Supernova Remnants to Understand the Formation Process of Recombining Plasmas
S10.12	T. Matsuoka	Millimeter Emission from SNe in the Very Early Phase: Implications for Dynamical Mass Loss of Massive Stars
S10.13	N. Maxted	Upper Limits on Very-High-Energy Gamma-ray Emission from Supernovae Observed with H.E.S.S.
S10.14	M. Miceli	Fe K-alpha emission from the southwestern limb of SN 1006
S10.15	O. Mogawana	Radio Predictions Of Core-Collapse Supernovae
S10.16	A. P. Ravi	The Latest Evolution in the X-ray Remnant of SN 1987A
S10.17	P. Saha	A study of Kepler supernova remnant: angular power spectrum estimation from radio frequency data
S10.18	J. Y. Seok	Unbiased Spectroscopic Study of the Cygnus Loop with LAMOST
S10.19	H. Yasuda	Time evolution of broadband non-thermal emission from SNRs in different circumstellar environments
S10.20	G.-Y. Zhang	Non-equilibrium ionization in mixed-morphology SNRs
S10.21	P. Zhou	Molecular Gas toward Supernova Remnant Cassiopeia A

**Special Session: JWST – SNRs/SNe**

S.S.1	E. Regos	Detection of SNe beyond redshift of 2 with the JWST
-------	----------	---



**PARTICIPANT LIST**

#	Last Name	First Name	Institution	Country	Email
1	Abate	Carlo	Alexander von Humboldt Foundation	Italy	carlo.abate.astro@gmail.com
2	Acerro	Fabio	DAP, CEA-Saclay	France	fabio.acerro@cea.fr
3	Alp	Dennis	KTH Royal Institute of Technology	Sweden	dalp@kth.se
4	Amato	Elena	INAF, Osservatorio Astrofisico di Arcetri	Italy	amato@arcetri.astro.it
5	Anderson	Joseph	ESO Vitacura	Chile	janderso@eso.org
6	Araya	Miguel	Universidad de Costa Rica	Costa Rica	miguel.araya@ucr.ac.cr
7	Arbutina	Bojan	Department of Astronomy, University of Belgrade	Serbia	arbo@matf.bg.ac.rs
8	Arias de Saavedra Benitez	Maria	Anton Pannekoek Institute	Netherlands	maria.arias.de.saavedra@gmail.com
9	Bamba	Aya	University of Tokyo	Japan	bamba@phys.s.u-tokyo.ac.jp
10	Bandiera	Rino	INAF, Osservatorio Astrofisico di Arcetri	Italy	bandiera@arcetri.astro.it
11	Bao	Yiwei	Nanjing University	China	byw19952008@163.com
12	Barlow	Michael	University College London	UK	mjb@star.ucl.ac.uk
13	Barna	Barnabás	Institute of Physics, University of Szeged	Hungary	bbarna@titan.physx.u-szeged.hu
14	Bersten	Melina	Instituto de Astrofísica de La Plata	Argentina	mbersten@fcaglp.unlp.edu.ar
15	Bevan	Antonia	University College London	UK	Antonia.bevan.12@ucl.ac.uk
16	Blair	William	Johns Hopkins University	USA	wblair@jhu.edu
17	Bocchino	Fabrizio	INAF, Osservatorio Astronomico di Palermo	Italy	fabrizio.bocchino@inaf.it
18	Bohdan	Artem	Deutsches Elektronen-Synchrotron DESY	Germany	artem.bohdan@desy.de
19	Bonanos	Alceste	IAASARS, National Observatory of Athens	Greece	bonanos@astro.noa.gr
20	Bouchet	Patrice	CEA-Saclay	France	Patrice.Bouchet@cea.fr
21	Boumis	Panos	IAASARS - National Observatory of Athens	Greece	ptb@astro.noa.gr
22	Braun	Chelsea	University of Manitoba	Canada	umbrau59@myumanitoba.ca
23	Bruursema	Justice	United States Naval Observatory, Flagstaff Station	USA	justice.elisha@gmail.com
24	Burrows	David	Penn State University	USA	burrows@astro.psu.edu
25	Caprioli	Damiano	University of Chicago	USA	caprioli@uchicago.edu
26	Castelletti	Gabriela	Institute of Astronomy and Space Physics	Argentina	gcastell@iafe.uba.ar
27	Castro	Daniel	Harvard-Smithsonian Center for Astrophysics	USA	daniel.castro@cfa.harvard.edu
28	Chandra	Poonam	National Centre for Radio Astrophysics, TIFR	India	poonam@ncra.tifr.res.in
29	Chawner	Hannah	Cardiff University	UK	chawnerhs@cardiff.ac.uk
30	Chen	Yang	Nanjing University	China	ygchen@nju.edu.cn
31	Chen	Chen-hung	Institute of Astronomy and Astrophysics, Academia Sinica	Taiwan	chhchen@asiaa.sinica.edu.tw
32	Chevalier	Roger	Department of Astronomy, University of Virginia	USA	rac5x@virginia.edu
33	Chiotellis	Alexandros	IAASARS, National Observatory of Athens	Greece	al.chiotellis@gmail.com
34	Chu	You-Hua	Institute of Astronomy and Astrophysics, Academia Sinica	Taiwan	yhchu@asiaa.sinica.edu.tw
35	de Wit	Stephan	IAASARS, National Observatory of Athens	Greece	sdewit@noa.gr
36	Dell'Ova	Pierre	Observatoire de Paris, Ecole Normale Supérieure	France	pierre.dellova@obspm.fr
37	Derlopa	Sophia	IAASARS, National Observatory of Athens	Greece	sophia.derlopa@noa.gr
38	Devin	Justine	Centre d'Études Nucléaires de Bordeaux Gradignan	France	devin@cenbg.in2p3.fr
39	Diaz Rodriguez	Mariangelly	Florida State University	USA	md14u@my.fsu.edu
40	Dickel	John	University of New Mexico	USA	jdickel1939@gmail.com
41	Diesing	Rebecca	University of Chicago	USA	rrdiesing@uchicago.edu
42	Domček	Vladimír	Anton Pannekoek institute for astronomy	Netherlands	v.domcek@uva.nl
43	Dubner	Gloria	Institute of Astronomy and Space Physics	Argentina	gdubner@gmail.com
44	Dwek	Eli	NASA Goddard Space Flight Center	USA	eli.dwek@nasa.gov
45	Fesen	Robert	Dartmouth College	USA	robert.fesen@dartmouth.edu
46	Filipovic	Miroslav	Western Sydney University	Australia	m.filipovic@uws.edu.au
47	Foy	Joseph	Barrett, the Honors College at Arizona State University	USA	jpfoy@asu.edu
48	Fragkou	Vasiliki	The University of Hong Kong	Hong Kong	vfrag@physics.auth.gr
49	Fransson	Claes	Department of Astronomy, Stockholm University	Sweden	claes@astro.su.se
50	Fryer	Chris	Los Alamos National Laboratory	USA	fryer@lanl.gov
51	Gallant	Yves	LUPM, UMR 5299, CNRS/IN2P3, U. Montpellier	France	gallant@lupm.in2p3.fr
52	Gelfand	Joseph	New York University Abu Dhabi	United Arab Emirates	jg168@nyu.edu
53	Ghavamian	Parviz	Towson University	USA	pghavamian@towson.edu
54	Giacani	Elsa	Instituto de Astronomía y Física del Espacio	Argentina	egiacani@iafe.uba.ar
55	Gomez	Haley	School of Physics and Astronomy, Cardiff University	UK	gomez@cardiff.ac.uk
56	Gonzalez Hernandez	Jonay	Instituto de Astrofísica de Canarias	Spain	jonay@iac.es
57	Greco	Emanuele	Università di Palermo, Dipart. di Fisica e Chimica	Italy	Emanuele.greco@inaf.it
58	Green	David	Cavendish Laboratory	UK	dag@mrao.cam.ac.uk
59	Green	Anne	University of Sydney	Australia	anne.green@sydney.edu.au
60	Grondin	Marie-Helene	Centre d'Etudes Nucléaires de Bordeaux-Gradignan	France	grondin@cenbg.in2p3.fr
61	Gronow	Sabrina	Heidelberg Institut für Theoretische Studien	Germany	sabrina.gronow@h-its.org

*SUPERNOVA REMNANTS II: AN ODYSSEY IN SPACE AFTER STELLAR DEATH*

62	Guest	Ben	University of Manitoba	Canada	umguest@myumanitoba.ca
63	Harvey	Éamonn	Liverpool John Moore's University	UK	e.j.harvey@ljmu.ac.uk
64	Hattori	Soichiro	New York University Abu Dhabi	United Arab Emirates	soichiro@nyu.edu
65	Holland-Ashford	Tyler	The Ohio State University	USA	holland-ashford.1@osu.edu
66	Holoien	Thomas	The Observatories of the Carnegie Institution for Science	USA	tholoien@carnegiescience.edu
67	Howell	D. Andrew	Las Cumbres Observatory, UCSB	USA	ahowell@lco.global
68	Hughes	John	Rutgers University, Dept of Physics & Astronomy	USA	jphastro@gmail.com
69	Hurley-Walker	Natasha	International Centre for Radio Astronomy Research	Australia	nhurleywalker@gmail.com
70	Ingallinera	Adriano	INAF, Osservatorio Astrofisico di Catania	Italy	adriano.ingallinera@inaf.it
71	Jacovich	Taylor	Harvard-Smithsonian Center for Astrophysics	USA	tjacovich@cfa.harvard.edu
72	Janka	Hans-Thomas	Max Planck Institute for Astrophysics	Germany	thj@mpa-garching.mpg.de
73	Joubert	Timothy	Harvard-Smithsonian Center for Astrophysics	USA	tjoubert2@gmail.com
74	Kasuga	Tomoaki	The University of Tokyo	Japan	kasuga@juno.phys.s.u-tokyo.ac.jp
75	Katsuda	Satoru	Saitama University	Japan	katsuda@phy.saitama-u.ac.jp
76	Katsuragawa	Miho	Kavli IPMU, The University of Tokyo	Japan	miho.katsuragawa@ipmu.jp
77	Kerr	Matthew	US Naval Research Laboratory	USA	matthew.kerr@gmail.com
78	Kirchschlager	Florian	Dept. Physics and Astronomy	UK	f.kirchschlager@ucl.ac.uk
79	Koo	Bon-Chul	Seoul National University	Korea	koo@astro.snu.ac.kr
80	Kopsacheili	Maria	University of Crete, FORTH	Greece	mariakop@physics.uoc.gr
81	Kostić	Petar	Astronomical Observatory Belgrade	Serbia	pkostic@aob.rs
82	Kothes	Roland	Dominion Radio Astrophysical Observatory	Canada	roland.kothes@nrc-cnrc.gc.ca
83	Kuuttila	Jere	Max Planck Institute for Astrophysics	Germany	kuuttila@mpa-garching.mpg.de
84	Kypriotakis	John	University of Crete, Department of Physics	Greece	ikyriot@physics.uoc.gr
85	Lach	Florian	Heidelberg Institute for Theoretical Studies	Germany	florian.lach@h-its.org
86	Larsson	Josefin	KTH Royal Institute of Technology	Sweden	josla@kth.se
87	Law	Charles	Harvard-Smithsonian Center for Astrophysics	USA	charles.law@cfa.harvard.edu
88	Leahy	Denis	University of Calgary	Canada	leahy@ucalgary.ca
89	Lee	Jongsu	Chungnam National University	Korea	skyljs1234@gmail.com
90	Lee	Ho-Gyu	Korea Astronomy and Space Science Institute	Korea	hglee@kasi.re.kr
91	Lee	Yong-Hyun	Seoul National University	Korea	yhlee@astro.snu.ac.kr
92	Lee	Shiu-Hang (Herman)	Kyoto University	Japan	shia520@gmail.com
93	Lemoine-Goumard	Marianne	CNRS-IN2P3	France	lemoine@cenbg.in2p3.fr
94	Leonidaki	Ioanna	IESL, FORTH	Greece	ioanna@physics.uoc.gr
95	Leung	Shing Chi	Kavli IPMU, The University of Tokyo	Japan	shingchi.leung@ipmu.jp
96	Li	Wenxiong	Tsinghua University	China	826400988@qq.com
97	Li	Chuan-Jui	ASIAA	Taiwan	cjli@asiaa.sinica.edu.tw
98	Lin	Chris	Institute of Astronomy and Astrophysics, Academia Sinica	Taiwan	djlin@asiaa.sinica.edu.tw
99	Liu	Qian-Cheng	Nanjing University	China	qcliu@smail.nju.edu.cn
100	Long	Knox	Space Telescope Science Institute	USA	long@stsci.edu
101	Lopez	Laura	The Ohio State University	USA	lopez.513@osu.edu
102	Loru	Sara	Astrophysical Observatory of Catania	Italy	sara.loru@inaf.it
103	Manousakis	Antonios	University of Sharjah UAE	United Arab Emirates	antonism@sharjah.ac.ae
104	Maravelias	Grigoris	IAASARS, National Observatory of Athens	Greece	maravelias@noa.gr
105	Margutti	Raffaella	Northwestern University	USA	rafmargutti@gmail.com
106	Matsumura	Hideaki	Kavli IPMU, The University of Tokyo	Japan	hideaki.matsumura@ipmu.jp
107	Matsuoka	Tomoki	Department of Astronomy, Kyoto University	Japan	t.matsuoka@kusastro.kyoto-u.ac.jp
108	Matsuura	Mikako	Cardiff University	UK	matsuuram@cardiff.ac.uk
109	Maxted	Nigel	UNSW Canberra	Australia	n.maxted@unsw.edu.au
110	Miceli	Marco	Universita di Palermo, Dipart. di Fisica e Chimica	Italy	marco.miceli@unipa.it
111	Michalowski	Michał	Astronomical Observatory	Poland	mj.michalowski@gmail.com
112	Milisavljevic	Dan	Purdue University	USA	dmilisav@purdue.edu
113	Millard	Matthew	University of Texas at Arlington	USA	matthew.millard@mavs.uta.edu
114	Modjaz	Maryam	New York University	USA	mmodjaz@gmail.com
115	Mogawana	Orapeleng	University Of Cape Town, South African Astronomical Observatory	South Africa	orapeleng@sao.ac.za
116	Moranchel	Alicia	ICN, Universidad Nacional Autonoma de Mexico	Mexico	amoranchel087@gmail.com
117	Moumen	Ismael	Université Laval, CFHT	Canada	ismael@cfht.hawaii.edu
118	Murphy	Jeremiah	Florida State University	USA	jeremiah.w.murphy@gmail.com
119	Nagao	Takashi	European Southern Observatory	Germany	t.nagao90@gmail.com
120	Nagataki	Shigehiro	RIKEN	Japan	shigehiro.nagataki@riken.jp
121	Niculescu-Duvaz	Maria	University College London	UK	maria.niculescu-duvaz.13@ucl.ac.uk
122	Nomoto	Kenichi	Kavli IPMU, The University of Tokyo	Japan	nomoto@astron.s.u-tokyo.ac.jp
123	Omi	Barbara	INAF OAA	Italy	barbara@arcetri.astro.it
124	Omand	Conor	University of Tokyo	Japan	omand@utap.phys.s.u-tokyo.ac.jp
125	Onic	Dusan	Department of Astronomy, University of Belgrade	Serbia	donic@matf.bg.ac.rs

*SUPERNOVA REMNANTS II: AN ODYSSEY IN SPACE AFTER STELLAR DEATH*

126	Orlando	Salvatore	INAF, Osservatorio Astronomico di Palermo	Italy	salvatore.orlando@inaf.it
127	Ou	Po-Sheng	Institute of Astronomy and Astrophysics, Academia Sinica	Taiwan	psou@asiaa.sinica.edu.tw
128	Ouchi	Ryoma	Kyoto University	Japan	ouchi@kusastro.kyoto-u.ac.jp
129	Pais	Matteo	Leibniz Institut für Astrophysik Potsdam (AIP)	Germany	mpais@aip.de
130	Paraskeva	Emmy	IAASARS, National Observatory of Athens	Greece	eparaskeva@noa.gr
131	Park	Sangwook	University of Texas at Arlington	USA	s.park@uta.edu
132	Patnaude	Daniel	Smithsonian Astrophysical Observatory	USA	dpatnaude@cfa.harvard.edu
133	Pazhayath Ravi	Aravind	The University of Texas at Arlington	USA	aravind.pazhayathravi@mavs.uta.edu
134	Pellizzoni	Alberto	INAF, Osservatorio Astronomico di Cagliari	Italy	alberto.pellizzoni@inaf.it
135	Peres	Giovanni	Università di Palermo, Dipart. di Fisica e Chimica	Italy	giovanni.peres@inaf.it
136	Picquenot	Adrien	CEA-Saclay	France	adrien.picquenot@cea.fr
137	Plucinsky	Paul	Smithsonian Astrophysical Observatory	USA	pplucinsky@cfa.harvard.edu
138	Priestley	Felix	University College London	UK	fdp@star.ucl.ac.uk
139	Raymond	John	Harvard-Smithsonian Center for Astrophysics	USA	jraymond@cfa.harvard.edu
140	Regos	Eniko	MTA CSFK CSI	Hungary	regos@konkoly.hu
141	Rest	Armin	Space Telescope Science Institute	USA	arest@stsci.edu
142	Reynolds	Stephen	North Carolina State University	USA	reynolds@ncsu.edu
143	Ritchey	Adam	Eureka Scientific	USA	ritchey.astro@gmail.com
144	Rosado	Margarita	Universidad Nacional Autónoma de México	Mexico	margarit@astro.unam.mx
145	Ruiter	Ashley	University of New South Wales Canberra	Australia	ashley.ruiter@adfa.edu.au
146	Ruiz-Lapuente	Pilar	ICCUB U.Barcelona, IFF CSIC	Spain	pilar@icc.uib.edu
147	Safi-Harb	Samar	University of Manitoba	Canada	samar.safi-harb@umanitoba.ca
148	Saha	Preetha	Indian Institute of Technology Kharagpur	India	preethasaha06@gmail.com
149	Sano	Hidetoshi	Nagoya University	Japan	sano@a.phys.nagoya-u.ac.jp
150	Sarbadhicary	Sumit	Michigan State University	USA	sarbadhi@msu.edu
151	Sawada	Ryo	Kyoto University	Japan	ryo@kusastro.kyoto-u.ac.jp
152	Schmidt	Franziska	University College London	UK	f.schmidt.16@ucl.ac.uk
153	Seitenzahl	Ivo	University of New South Wales	Australia	i.seitenzahl@adfa.edu.au
154	Seok	Ji Yeon	Korea Astronomy and Space Science Institute	Korea	jyseok@kasi.re.kr
155	Shimoda	Jiro	Tohoku University	Japan	j-shimoda@astr.tohoku.ac.jp
156	Shingles	Luke	Astrophysics Research Centre, Queen's University Belfast	UK	l.shingles@qub.ac.uk
157	Slane	Patrick	Harvard-Smithsonian Center for Astrophysics	USA	slane@cfa.harvard.edu
158	Slavin	Jonathan	Harvard-Smithsonian Center for Astrophysics	USA	jslavin@cfa.harvard.edu
159	Smith	Nathan	University of Arizona	USA	nathans@as.arizona.edu
160	Spetsieri	Zoi Tzogia	IAASARS, National Observatory of Athens	Greece	zspetsieri@noa.gr
161	Sun	Lei	Nanjing University	China	lsun_94@foxmail.com
162	Sushch	Iurii	DESY, Zeuthen	Germany	iurii.sushch@desy.de
163	Sutaria	Firoza	Indian Institute of Astrophysics	India	fsutaria@gmail.com
164	Suzuki	Akihiro	National Astronomical Observatory of Japan	Japan	akihiro.suzuki@nao.ac.jp
165	Suzuki	Hiromasa	The University of Tokyo	Japan	suzuki@juno.phys.s.u-tokyo.ac.jp
166	Takiwaki	Tomoya	National Astronomical Observatory Of Japan	Japan	takiwaki.tomoya.astro@gmail.com
167	Tanaka	Shuta	Aoyama Gakuin University	Japan	shtanaka@phys.aoyama.ac.jp
168	Temim	Tea	Space Telescope Science Institute	USA	ttemim@stsci.edu
169	Terreran	Giacomo	Northwestern University	USA	giacomo.terreran@northwestern.edu
170	Tramper	Frank	IAASARS, National Observatory of Athens	Greece	ftramper@gmail.com
171	Tsuji	Naomi	Rikkyo University	Japan	n.tsuji@rikkyo.ac.jp
172	Tutone	Antonio	University of Palermo, INAF/IASF Palermo	Italy	antonio.tutone@inaf.it
173	Ustamujic	Sabina	INAF, Osservatorio Astronomico di Palermo	Italy	sabina.ustamujic@inaf.it
174	Velazquez	Pablo	Universidad Nacional Autonoma de Mexico	Mexico	pablo@nucleares.unam.mx
175	Vink	Jacco	Anton Pannekoek Institute, GRAPPA	Netherlands	j.vink@uva.nl
176	Vogt	Frédéric	European Southern Observatory	Chile	fvogt@eso.org
177	Vučetić	Milica	Department of Astronomy, University of Belgrade	Serbia	mandjelic@matf.bg.ac.rs
178	Weil	Kathryn	Dartmouth College	USA	kathryn.e.weil.gr@dartmouth.edu
179	Wesson	Roger	University College London	UK	rw@nebulousresearch.org
180	West	Jennifer	University of Toronto	Canada	Jennifer.west@dunlap.utoronto.ca
181	Williams	Brian	NASA Goddard Space Flight Center	USA	brian.j.williams@nasa.gov
182	Wongwathanarat	Annop	Max-Planck Institute for Astrophysics	Germany	annop@mpa-garching.mpg.de
183	Yalinewitz	Almog	CITA	Canada	almog.yalin@gmail.com
184	Yamazaki	Ryo	Aoyama Gakuin University	Japan	ryo@phys.aoyama.ac.jp
185	Yang	Ming	IAASARS, National Observatory of Athens	Greece	myang@noa.gr
186	Yasuda	Haruo	Kyoto University	Japan	yasuda@kusastro.kyoto-u.ac.jp
187	Zekovic	Vladimir	Department of Astronomy, University of Belgrade	Serbia	vlada@matf.bg.ac.rs
188	Zeng	Houdun	Purple Mountain Observatory, Chinese Academy Sciences	China	zhd@pmo.ac.cn
189	Zhang	Xiao	Nanjing University	China	xiaozhang@nju.edu.cn
190	Zhang	Gao-Yuan	School of Astronomy and Space Science, Nanjing University	China	zgy0106@gmail.com
191	Zhou	Ping	Anton Pannekoek Institute	Netherlands	p.zhou@uva.nl



## **NOTES**

## NOTES

## NOTES

## NOTES

## NOTES

## NOTES

## NOTES

## NOTES



## NOTES



SUPERNOVA REMNANTS II  
AN ODYSSEY IN SPACE AFTER STELLAR DEATH  
3-8 June 2019, Chania, Crete, Greece

