CV Massimo Della Valle

1957-10-22. Born in Bari

1976. High School (Liceo) diploma, Brescia.

1983. Laurea in Astronomia, Università di Padova (Summa cum Laude). Supervisor: Prof. L. Rosino.

1984. Fellow at the Asiago Astrophysical Observatory

1985. PhD student at the Byurakan Observatory (ex-URSS). Supervisor: Prof. Ambartsumian.

1988. PhD in Astronomy Università di Padova. Supervisor: Prof. L. Rosino.

1989. Post-Doc at SISSA, Trieste

1990-1993. Fellow at the European Southern Observatory, La Si

1994. Fellow at the European Southern Observatory, Munchen, Germany

1995-2000. Assistant Professor at the Astronomy Dept., Universita' d Padova.

2001-2007. Associate Astronomer at the Arcetri Astrophysical Observatory

2008. Dirigente di Ricerca at the Capodimonte Astronomical Observatory, INAF-Naples.

2008-2009 Associate Astronomer at the ESO Telescope Division (on leave of INAF-Napoli)

April 2010 – January 2018 Director of the Capodimonte A Observatory, INAF-Naples

Feb 2018 – Dirigente di Ricerca at the Capodimonte A Observatory, INAF-Naples.

Scientific Work

The research activity covers several fields in the observational Astronomy: a) Supernovae (local and at high redshifts); b) measure of the cosmological parameters; c) Novae (galactic and extragal Distance Scale; e) Gamma-ray bursts and their afterglows; f) Supernova/GRB connection; g) Kilonovae (i.e. electromagnetic counterparts of gravitational wave sources).

He has authored about 600 publications, including about 40 invited invited review papers and 240 papers that have appeared in international refereed scientific journals. The set of publications collected ~ 17,500 citations with h index 64 (source ADS at 2019).

Highlights

Supernovae

In the early '90s he was one of the first collaborators of Sa (Nobel laureate 2011) for the discovery of the accelerating ex the Universe through Supernovae.[1] Later he also collaborates wi Adam Riess and Brian Schmidt in the follow-up of SNe of p interest[2] and with Piero Madau[3] and Dani Maoz[4] on the frequency of occurrence of SNe at high and low redshift respectively.

Novae

Between 1990 and 1998 in a series of works written in with Mario Livio[5,6], he has introduced the concept of novae populati replacing the classical subdivision in morphological classes, with a physical classification. More recently with Bob Williams, Francesca Matteucci and others he used high-resolution spectroscopic observations to study the follow-up of classic Milky Way novae to identify for the first time the presence of Lithium in the N spectrum 2013[7]. An observation that solves the problem of the exist discrepancy between the measurements of Lithium abundances observed in young stars with the value of the primordial abunda Lithium recently measured by the Planck satellite.

Optical counterparts of high energy sources and Gamma-Ray Bu

Since 1990 he was very active in the identification of the optical counterparts of X sources and their connection with black holes[8,9,10]. 1999, after the observations of the Peppo-Sax satellite, he was a the first to study the SN-GRB connection[11,12]. This work is still in progress. As member of the Swift follow-up Team, he h about thirty papers with Neil Geherels, Filippo Frontera, Guido Chincarini, Ken Nomoto and others[13,14,15,16,17]. In 2006 he has identifi new explosive channel for massive stars associated with "long" [18]. More recently he has devoted many efforts to exploring the p of using GRBs as high-z probes of the early universe[19] and measuring the cosmological parameters[20].

Electromagnetic counterparts of gravitational wave sources

As active member of the international collaborations ePESSTO (e Public ESO Spectroscopic Survey for Transient Objects) and ENGRAV (Electromagnetic counterparts of gravitational wave sources at th Large Telescope) and GRAWITA Italian team (GRAvitational Wave In TeAm), he has collaborated at the identification and study o electromagnetic counterpart of a gravitational wave source, GW 17[21, 22].

References

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9. Bailyn, C., Orosz, J., Girard, T., Jogee, S., Della Valle, M. et a 374, 701
10. Middleton, M. et al. 2013, Nature, 493, 187
11. Della Valle, M., Malesani, D., Benetti, S. et al. 2003, A&A, 40
12. Della Valle, M. 2006, GAMMA-RAY BURSTS IN THE SWIFT ERA: Sixteenth Maryland Astrophysics Conference. AIP Conference Proceedings, Volume 836, pp. 367-379
13. Campana, S. et al. 2006, Nature, 442, 1008
14. Racusin, J. et al. 2008, Nature, 455, 183
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17. Izzo, L., de Ugarte Postigo, A., Thoene, C. Kann, A 2019, Nature, 565, 324
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19. Salvaterra, R., Della Valle, M., Campana, S. et al. 2009, Na
20. Amati, L. & Della Valle, M. 2013, IJMPD, 22, 14
21. Abbott et al. 2017, ApJL, 848, L12
22. Smartt et al. 2017, Nature, 551, 75

Coordinator of research projects and scientific-technological programs and participation in scientific and technological programs of great national and international importance

He has coordinated 39 and participated to 185 scientific thproposals[a] were then carried out with the major ground-based telescopes (e ESO-VLT and ESO-NTT, Gemini, LBT) and from Space (Swift, H Newton, Chandra). He is currently involved in the Euclid a missions. THESEUS is an ESA satellite for sky exploration in d This mission was selected in May 2018 as a finalist to b Medium-class mission (M5) of the Cosmic Vision programme b European Space Agency (ESA). The winner will be selected in would launch in 2032. He is in the Science Board of S Shooter). This spectrograph + imaging were selected in world wide proposals by ESO, to equip NTT and provide the commun with a strategic follow-up tool up of the transients revealed by large 8.4m surveys telescope that will start operating in the same ye (2021 - 2022).

[a] http://archive.eso.org/wdb/wdb/eso/sched_rep_arc/query

He coordinates and has coordinated several research programs fu by the Ministry of Education, University and Research (PRIN-MIUR a PRIN INAF).

PRIN INAF 2002: The physics of type Ia supernova explosions (MDV Local Coordinator – Arcetri; PI E. Cappellaro)
PRIN INAF 2005: Studio della Dark Energy attraverso strumenti cosmologici complementari (MDV Local Coordinator – Arcetri; PI G. Ghisellini
PRIN INAF 2006: A study of the Supernova–Gamma-ray Bursts Connection in Local Universe (PI M. Della Valle)
PRIN MIUR 2006: Fisica delle supernovae, fasi finali di evoluzione,nucleosintesi (M Local Coordinator – Arcetri, PI M. Busso)
PRIN MIUR 2009: Gamma Ray Bursts: from progenitors to the physicsof th emission process (MDV INAF Coordinator – PI F. Frontera)
PRIN INAF 2011: Transient Universe: from ESO Large to PESSTO (MDV Local Coordinator – Capodimonte; PI S. Benetti)
PRIN INAF 2014: "Transient Universe, unveiling new types of stellar explosion PESSTO" (MDV Local Coordinator – Capodimonte; PI A. Pa

PRIN INAF 2016: Astri/CTA Data Challenge (MDV Local Coordinator, Capodimonte, PI P. Caraveo)
PRIN INAF 2016: Towards the SKA and CTA era: discovery, localization, ar transient sources (MDV Local Coordinator, Capodimonte, PI M. Giroletti)
PRIN INAF 2017: "The origin of lithium: a key element in astronon Coordinator, Capodimonte, PI P. Molaro)"
PRIN MIUR 2018: Electromagnetic follow-up of gravitational wave events (MDV Lo Coordinator, Capodimonte, PI E. Cappellaro)

In 2013 he was appointed Italianrepresentative in the Scientific Co of the International Center for Relativistic Astrophysics (see at 1).

Science leaves (months)

1996(1), 1997(1), 1999(2), 2003(2), 2005(2), 2019(2). Visiting Southern Observatory, Garching.

1995(1), 1997(2), 2000(2), 2002(1), 2004(2). Visiting Scientist, Space Telescope, Science Institute, Baltimore.

1998(2), 2001(2), 2003(2). Visiting Scientist, European Southern Observatory, Santiago and Paranal.

2006(1). Visiting Scientist, Department of Astronomy, Graduate School o University of Tokyo, Japan

2006(2), 2007(2). Visiting Scientist, KAVLI Institute, Santa Barbara, California University

2007(1). Visiting Scientist, Aspen Center for Physics

2007(1). Visiting Scientist, Dark Cosmology Center, Niels Bohr Institute,

2007(1). Visiting Scientist, Queen's University, Belfast, UK

2018(3). Visiting Scientist, at the IAA (Instituto de Astrofisica de

2018(1). Université de Savoie. Laboratoire d'Annecy-le-Vieux.

Teaching

1989. Lecturer at the SISSA (Trieste): ``The Cosmological Distance Ladder''

1992. Visiting Professor, Centro de Astrofisica da Universidade do P
``The Late Stages of the Stellar Evolution''.
Assistant Professor "Esercitazioni di Astronomia I" (Padova, Astronomy D
1994/95; 1995/96; 1996/97).

Assistant Professor "Laboratorio di Fisica II" (Padova Dip. Astronomia a.

Regular teacher of "Astronomia Generale" (Padova Dip. Fisica a.a. 1996/97;
1997/98).

Lecturer at the Physics Dept., Ferrara Università: "Tecniche Osservative in
Astronomia" (a.a. 2002/03; 2003/04; 2005/06; 2006/2007) and PhD courses
2009/2010)

Lecturer in PhD schools: Nova Populations 2003, Elba; Novae and Supernov
Sorrento; The empirical grounds of SN-GRB connection 2005, L'Aquila;
2005, SISSA, Trieste; SNe and GRBs: selected topics: 2006, Angras dos R
The Distance Ladder 2007, Padova; Supernovae and Gamma-ray Bursts 2
Servolo, Venezia; Gamma-ray Bursts as Cosmological Tools 2009, Seoul; E
phenomena in stars, 2010, Université Sophia Antipolis, Nice; GRB and SNe 20
Houches; Supernovae and Gamma-ray Bursts, 2011, Université Sophia A
Nice; Gamma-ray Bursts 2012, Napoli; Cataclysmic Variables, 2012, Teramo; N
and Supernova Explosions 2014, Les Houches; Supernovae and Cosmology, 2
Ajaccio; Supernovae from an Observational perspectives, 2019, INFN Catania,

Seminars in important Scientific Institutes (last ten years)

Astronomy Department Tokyo University; KAVLI Institute Santa Barbara, Californi
University; Beijing KAVLI Institute; Hubble Space Telescope Institute, B
Munich Join Colloquium ESO Garching; Aspen Center for Physics; Niels Bo
Copenhagen; Institute for Advanced Study of Princeton; Queen's U
Belfast; University Sophia Antipolis, Nizza; CBPF Rio de Janeiro; University of
Massachusetts Amherst; Instituto de Astrofisica de Andalucia; A
Université de . Savoie

Experience in the evaluation of the results of National and International research.

Member of the Time Allocation Commettee for ESO, HST and Subaru telescopes.

Referee for A&A, ApJ, MNRAS, AJ, PASP, Nature, Science, A Space Research.

In 2017, 18, and 19 he served as referee for proposals of Starting, Consolidator, Advanced and Synergy Grant Calls (see attachment 2).

He has been reviewer for both science proposals and "Appointmen and Promotions" committees in the following Institutions:

i) Chilean National Science and Technology Commission;
ii) United States-Israel Binational Science Foundation;
iii) Open University of Israel;
iv) Italian Evaluation of Research Quality (VQR);
v) PRIN-MIUR 2015;
vi) Aerospace Engineering Department at Khalifa University, Abu Dhabi;
vii) Liverpool John Moore University;
viii) Weizmann Institute of Science, Tel Aviv
ix) National Research Foundation, South Africa.

Other Activities

Coordinator of the Observing Service Mode at the European S Observatory (1990-1993).

Coordinator ot the Target of Opportunity policy at the European Southern Observatory (1990-1993).

Member of the Target Opportunity committee of IUE (until t down,~ 1996)

Coordinator of the Research Unity at the Padova/Asiago Observa (1997-2000)

Member of IAU (since 1988)

Member of the IAU working group on SNe

Member of the SWIFTfollow-up team

Member of the SWIFTNova-CV team

Member of the Ligo/Virgo electromagnetic followup team

Organizer of the first astronomical meeting Italia-Israele http://wise-obs.tau.ac.il/~dani/italy/

Member of the Science Board of SOXS+NTT

Member of "Ateneo di Brescia - Accademia di Scienze Le

Member of the "Academic Board in Physics" (Collegio dei D Dottorato in Fisica), Federico II University, Napoli.

Lingue:

Italiano, Inglese e Spagnolo (fluent). Francese e Tedesco (basic knowledge)

Outreach:

- Author of dozens of papers published on Astronomy, Co and national newspapers.

- On the occasion of the celebrations for the bicentennial of the foundation of the Capodimonte Observatory (1812-2012), he has promoted (taking advantage of a generous budget provided by

Campania region) the realization of the "Museum of Astronomical Instruments" (about 110 pieces distributed over an exhibition a about 500m2) which is inaugurated on November 4, 2012 in the Capodimonte Observatory.

- He has promoted as chair or member of the scientific c numerous exhibitions, such as:

i) The Temple of Urania realized at the State Archives of 29 September 2012;

ii) The Factories of Heaven in the framework of "Futuro Remoto" initiative: one of the most important and consolidated European scientific and technological dissemination events held in Naples 1987.

iii) Paleocontemporanea: Fragments of transcendence in artistic representation from pre-Christian civilizations to contemporary, first edition of the art exhibition developed in the historical and cu of the Collina di Capodimonte: National Archaeological Museum of Naples, Catacombs of Naples, Capodimonte National Museum ar Capodimonte Astronomical Observatory, 2013.

iv) Viaggiatori del Cosmo from Giordano Bruno to the fi Moon by Ernesto Capocci, Astronomical Observatory of Capodi 13 March-30 April 2015, extended to 31 May 2015 (with patronage o Accademia dei Lincei). The exhibition was enriched by the anastat reprint of selected works by Ernesto Capocci: Report of th to the Moon made by a woman in the year of grace 2 Cottrau, Naples 1857) eight years ahead of Jules Verne's novel De la Terre à la Lune; Framework of the Solar Planeta (Printing House of Iride 1853); Dialogues on Comets (typogr Giornale del Regno delle due Sicilie,1825).

- He has published the book: "Che il Diavolo benedica i P Scientific Chronicles "and non" of Naples in the years immedi

the kingdom of Gioachino Murat. In collaboration with Mauro and Emilia Olostro-Cirella. Tullio Pironti publisher, Naples 2015.

- He has published the book "Supernova" in the Piero A Viaggio nell' Universo, Agosto, 201