

Il sottoscritto Andrea Giuliani, ai sensi dell'art. 46 del D.P.R. n. 445/2000 e successive modificazioni ed integrazioni e consapevole della responsabilità penale prevista dall'art. 76 del medesimo D.P.R., per le ipotesi di falsità in atti e dichiarazioni mendaci ivi indicate, dichiara che le informazioni riportate nel seguente curriculum vitae corrispondono a verità

CURRICULUM VITAE ET STUDIORUM

Name : **Andrea Giuliani**

Nationality : Italian

Date and place of birth : February 12th 1974, Pavia (Italy)

Marital Status : Married

Languages : English (excellent), French (scholastic)

Ph.D. : received from Milano-Bicocca University
in January 2005

Present Position : Associate Researcher at the
IASF-Milano Institute (INAF)

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Education and Qualifications

March 2001 : Graduation in Physics, 102/110, at the Pavia University. Title of the Thesis: "Studio e ottimizzazione della risoluzione angolare del telescopio spaziale per astronomia gamma AGILE" (Study and Optimization of the angular resolution of the AGILE gamma-ray telescope). Supervisors : Prof. G.F. Bignami (Pavia University), Dott. S.Mereghetti (IASF Milano) and Dott. M.Roncadelli (INFN Pavia).

May 2001 : Post-graduate position for one year at the IASF Milano Institute (INAF) as researcher on gamma-ray astronomy.

November 2001 : Selected for a three-year Ph.D. position in Astrophysics

and Astronomy at the Milano-Bicocca University. Graduate courses and examinations.

October 2004 : Selected for a four-year post-doc position as researcher at the IASF-Milano Institute (INAF). Research activity: Study of algorithms for reduction of cosmic-ray background and reconstruction of gamma-ray events in the gamma-telescope AGILE.

January 2005 : Discussion of the Ph.D. Thesis: “Gamma-Ray emission from the Galactic plane: a new model for AGILE”. Ph.D. degree at the Milano-Bicocca University.

June 2008 : Selected for an Associate Researcher position at the IASF-Milano Institute (INAF) with duration 5 years.

June 2013 : CoCoPro position at CIFS, Consorzio Interuniversitario per la Fisica Spaziale, Torino, with duration 5 months

November 2013 : Selected for an Associate Researcher position at the IASF-Milano Institute (INAF) with duration 5 years.

Schools

Italian National School of Astrophysics: “Astrophysics of the interstellar medium, compact objects and pulsars”, Costa Rey, Cagliari, Italy, 27 September - 3 October 2003.

Prizes

Winner of the Rossi Prize 2012 as member of the AGILE team.

Invited Talks and Seminars

“*Gamma-Ray emission from the Galaxy*”, invited talk at the **2nd Workshop on “Science with the New Generation of High Energy Gamma-ray Experiments”**, Bari, Italy, 21-23 June 2004.

“*AGILE and the Gamma-Ray emission from the Interstellar Medium*”, invited talk at the **Miniworkshop on the propagation and origin of cos-**

mic rays, University of Roma "Tor Vergata", Roma, Italy, 17-18 November 2005.

Invited lecturer at the Astrophysical Spring School: "Observing the X- and Gamma-ray Sky" (Cargèse, Corsica, April 2006) on "**The AGILE Mission**".

"AGILE's detailed view of the Galactic plane, SNRs and gamma-ray sources", invited talk at the **5th Science AGILE Workshop "AGILE's first year of gamma-ray astrophysics"**, ESRIN, Frascati (Rome), Italy, 12-13 June 2008.

Invited lecturer at the International Winter School on the Interstellar Medium 2009 (Ise-Shima, Mie, Japan, February 23-27, 2009), on "**Galactic sources with AGILE**"

"Gamma-ray SNRs highlights", invited talk at the **7th Science AGILE Workshop "The Bright Gamma-Ray Sky"**, ESRIN, Frascati (Rome), Italy, 29 September - 1 October, 2009

Invited seminar : "**Gamma-ray SNRs observations with AGILE**" at the INAF/IASF Palermo, October 13, 2009

"SNR W28, AGILE results in perspective" invited talk at the **Workshop on "Exploring Supernova Remnants and Pulsar Wind Nebulae in X-rays: before and after ASTRO-H"** ISAS/JAXA, Japan, Feb.18-19, 2010

Invited lecturer at the International Winter School on the Interstellar Medium 2010 (Ise-Shima, Mie, Japan, February 22-26, 2010), Lessons : "**The AGILE Project**" and "SNRs and PWNs seen by AGILE"

Invited lecturer at the IRAP Ph.D. Erasmus Mundus Workshop, "Recent News from the MeV, GeV and TeV Gamma-Ray Domains", Pescara (Italy), March 21-26, 2011 Lessons : "**Overview of AGILE SNRs**" and "**The SNR W28**"

Invited seminar : "**Supernova Remnants, the cosmic-ray sources**" at the University of Pavia, December 5, 2011

Invited seminar : "**The cosmic-ray sources**" at the Osservatorio Astronomico di Cagliari, July 2, 2012

Invited lecturer at the International School of Space Science, "Astrophysical

and Space Plasmas”, L’Aquila (Italy), September 2-8, 2012

Invited seminar : “**Science with AGILE and future gamma-rays telescopes**” at the International Center for Theoretical Physics, Trieste, October 25, 2013

Talks and Posters at International Conferences

“*Gamma Emission from the Galaxy: a new model for AGILE*”, talk at the **4th AGILE Science Workshop**, Frascati (Rome), 11-13 June 2003.

“*Optimization of the Angular and Energy Resolution of the AGILE Gamma-Ray Detector*”, poster at the **4th AGILE Science Workshop**, Frascati (Rome), 11-13 June 2003.

“*Gamma-Ray emission from the Galaxy: a new model for AGILE*”, poster at the **Congresso della Società Astronomica Italiana**, Milano, April 2004.

“*Gamma-Ray emission from the Galaxy*”, talk at the **Third International Conference on Frontier Science "Physics and Astrophysics in Space"**, Monteporzio Catone (Rome), Italy, 14-19 June 2004.

“*AGILE’s detailed view of the Galactic plane, SNRs and gamma-ray sources*”, talk at the **4th Heidelberg International Symposium on High Energy Gamma-Ray Astronomy**, Heidelberg, Germany, 7-11 July 2008.

“*AGILE : Observations and Future Perspective*”, talk at the **High Energy Phenomena In Massive Stars**, University of Jaen, Jaen, Spain, 2-5 February 2009.

“*Gamma-Ray Galactic Diffuse Emission and SNR Studies by AGILE*”, talk at the **31st International Cosmic Ray Conference**, Łódź, Poland, 7-15 July 2009.

“*AGILE observations of W28 and other SNRs: direct evidence of hadronic acceleration*” poster at **25th Texas Symposium on Relativistic Astrophysics** Heidelberg, Germany, December 6-10, 2010

“*AGILE observations of middle-aged SNRs*” poster at the conference **CRISM 2011, Cosmic rays and their interstellar medium environment**, Montpellier, France, 26 June - 01 July 2011

“Gamma-rays view of the Galaxy” talk at the conference **MW 2011 - The Milky Way in the Herschel Era** Rome, Italy, September 19-23, 2011

“Middle-aged SNRs with AGILE” talk at the **AGILE 9th Science Workshop: “Astrophysics with AGILE: five years of surprises”**, ASDC c/o ESRIN Frascati (Rome), April 16 - 17, 2012

“SNR W44, a great laboratory for CR production” talk at the **Sant Cugat Forum on Astrophysics**, Barcelona, Spain, April 16-19, 2012

“AGILE studies of supernova remnants”, talk at the **9nd Workshop on "Science with the New Generation of High Energy Gamma-ray Experiments"**, Lecce, Italy, 20-22 June 2012

“AGILE’s detailed view of the Galactic plane, SNRs and gamma-ray sources”, talk at the **5th International Symposium on High Energy Gamma-Ray Astronomy (Gamma2012)**, Heidelberg, Germany, 9-13 July 2012

“SNR W44, the first unambiguous evidence of gamma-rays emission from neutral-pions decay” poster at **26th Texas Symposium on Relativistic Astrophysics** Sao Paulo, Brasil, December 6-10, 2012

“Evidence of hadronic emission in middle-aged SNRs”, talk at the **Rencontres de Moriond**, La Thuile, Italy, 9-16 March 2013

“Supernova Remnants, molecular clouds and gamma rays” talk at the **11th AGILE Science Workshop: "Gamma-rays and Galactic Cosmic Rays"**, Rome, Italy, May 16 - 17, 2013

“Evidence of hadronic emission in middle-aged SNRs”, talk at the **33st International Cosmic Ray Conference**, Rio de Janeiro, Brasil, 2-9 July 2013

“Hadronic emission in middle-aged SNRs”, talk at the **40th Cospar Meeting**, Moscow, Russia, 2-10 August 2014

“SNRs, PWNe, and gamma-ray binaries: the ASTRI/CTA mini-array view”, talk at the **9th ASTRI Collaboration Meeting**, Bologna, Italy, 23-25 February 2015

“Galactic Science with ASTRI/CTA Mini Array”, talk at the **CTA Consortium Meeting** held in Turku, Finland, 4-8 May 2015

Conferences and Workshops organization

AG has been part of the Scientific Organizing Committee of the following Conferences:

AGILE 6th Science Workshop “AGILE: 2 years after”, at INAF/IASF, Milan, 22-23 April, 2009

AGILE 9th Science Workshop: “Astrophysics with AGILE: five years of surprises”, ASDC c/o ESRIN Frascati (Rome), April 16 - 17, 2012

11th AGILE Science Workshop: “Gamma-rays and Galactic Cosmic Rays”, ASI Headquarters, Rome, May 16-17, 2013

AGILE 12th Science Workshop: “ASTRO-EARTH: astrophysics and high-energy terrestrial phenomena”, ASI Headquarters, Rome, May 8 - 9, 2014

AGILE 13th Science Workshop: “AGILE: 8 and counting”, ASI Headquarters, Rome, May 25 - 26, 2015

Responsibilities

AG was responsible for the on-flight calibration of the GRID gamma-ray instrument aboard of the AGILE satellite from September 2007 to May 2008. As such AG has organized the calibration working group which has produced the first instrument response files.

AG is chair of the AGILE working group “Diffuse and Dark Matter”.

Working group organization

AGILE working group on Supernova Remnants: during the whole data taking period AG has been coordinator of the working group for the study of the SNRs. This working group included both AGILE team members and colleagues from Japan and Argentina. The results obtained from the working group are detailed described below.

ASTRI Scientific Simulation Working group: AG has created this working group during summer 2014, organizing all the ASTRI collaborators working on scientific simulations for future observations of the experiment. As WG coordinator he manages the work and runs the meeting organization.

Teaching Activity and Seminars

Supervisor for the graduating thesis in physics of A. Stanzione on “Studio del fondo strumentale del satellite per astronomia gamma AGILE prodotto dai raggi cosmici e tecniche di reiezione”, Academic Year 2004-2005, University of Milano

Supervisor for the graduating thesis in physics of F. Fornari on “Tecniche di riduzione del fondo strumentale per il telescopio gamma AGILE e applicazione a sorgenti astrofisiche”, Academic Year 2006-2007, University of Milano.

Seminars for the “Introduzione all’astronomia” class, at the Corso di Laurea triennale in Fisica, Academic year 2010-2011, University of Pavia

Supervisor for the PhD thesis in Astronomy of M. Cardillo on “Particles acceleration in galactic SNRs”, Academic Years 2010-2013, University of Roma Tor Vergata,

Seminars for the “Astronomia” class, at the Corso di Laurea triennale in Fisica, Academic year 2012-2013, University of Pavia

Seminars for the “Astronomia” class, at the Corso di Laurea triennale in Fisica, Academic year 2013-2014, University of Pavia

Supervisor for the master thesis in physics of S. Crestan on “Classificazione di spettri in banda gamma di resti di supernova”, Academic Year 2014-2015, University of Pavia.

Lecturer for the “Astrofisica” class (48 hours), at the Corso di Laurea Magistrale in Fisica, Academic year 2015-2016, University of Pavia

Research Activity

Andrea Giuliani (AG) has been part of the AGILE Science Team since 2001. During this period he has been involved in both technical aspects of the research activities, such as event selection and reconstruction with the GRID (*Gamma Ray Imager Detector*) instrument, and scientific aspects, among which modeling the gamma-ray emission of the interstellar medium and data analysis of gamma sources detected by AGILE, especially cosmic-ray accelerators (SNRs and PWNs) and GRBs.

Scientific software development for AGILE: AG is responsible for the event reconstruction software for the AGILE GRID. Since the gamma-ray detectors are based on the detection of photon pair production, the reconstruction software covers a special role in the instrument performances (efficiency, angular and energetic resolution). AG has developed a software code for track identification and reconstruction using the AGILE tracker, based on the kalman filter technique (KALMA). This software is the official tool used at the ASDC (ASI Science Data Center) and provides both energy and direction of the gamma-ray observed by AGILE. A simplified version of this algorithm (KALMEX) has been implemented in the AGILE on-board software in order to reject earth albedo events, as described in [Giuliani *et al.*(2006)].

AG is also involved in the study of background rejection for the GRID instrument. The background is mainly due to charge particles which produce an event rate some orders of magnitude higher than the cosmic gamma-ray one. The algorithm developed by AG is able to discriminate signal events from background on the basis of topological characteristics of the event classes. This tool is part of the official software package and is part of the AGILE on-ground event selection pipeline.

Moreover AG has contributed to the development of DHSIM, a software which allows for the simulation of the AGILE on-board trigger logic. This tool has been extensively used to optimize the parameters of the on-board algorithms.

AG has participated to the Monte Carlo simulation of the AGILE data for a complete orbit. The simulation includes both the gamma-ray events as produced by cosmic sources, and the background events as induced by charged particles and albedo photons. This Monte Carlo simulation, which has required about 1000 hours in CPU time, consists of about 10 million events and is the largest AGILE simulated event archive.

AG took part in the integration of the Tracker and Anticoincidence systems with the Satellite Payload Shell started in September 2005. During these phases a continuous monitoring of the system performances was required. This activity was carried on by AG both at the IASF institute in Milan and in the different laboratories in which the integration took place, such as Laben laboratories in Vimodrone (Milano), the C. Gavazzi Space laboratory in Tortona (Alessandria) and the IABG laboratory in Ottobrunn (Munich). During November 2005, AGILE was calibrated on a beam test facility at the INFN National Laboratories in Frascati (Rome). The satellite instrumentation has been irradiated with high energy particles beams

(photons, electrons and positrons) provided by the LINAC accelerator.

AG has contributed to the test beam organization concerning the optimization of the irradiation configurations, such as beam incidence angles, positions and energy, and has participated to the data taking.

AG was involved in the analysis of both the data acquired during the AGILE calibration campaign in 2005 and the cosmic muon data taking with the tracker during the apparatus assembling. This data allowed for the determination of the tracker performances, such as efficiency and spatial resolution. Moreover comparison with simulated events has been used for validation of the Monte Carlo software.

After the launch of AGILE, in April 2007, AG has coordinated the study of the in-flight calibration data, obtaining the characterization of the AGILE gamma-ray imager, such as effective area, point spread function and energetic response matrix. As for now, AG is responsible for the GRID calibration.

The model of the γ -rays emission interstellar medium : AG has elaborated the model of the gamma-ray emission of the interstellar medium of the Galaxy used in the AGILE scientific software. This work is described in his PhD thesis (title: "Gamma-Ray emission from the galactic plane: a new model for AGILE"), and in [Giuliani *et al.*(2004)].

The model gives an estimation of the Galactic gamma emissivity on a grid which is a tridimensional representation of the whole Galaxy. The gamma emissivity is obtained by calculating the interaction of cosmic rays with the interstellar medium (mainly molecular clouds and HI clouds) through bremsstrahlung and p-p interaction, and the interaction of cosmic rays with interstellar radiation field (infrared and optic-UV) through inverse Compton. The interstellar gas distribution has been obtained from recent radio surveys, while spectra and distribution of both cosmic rays and radiation fields are obtained from numerical models. AG is now chair of the AGILE working group "Diffuse and Dark Matter".

Analysis and modeling of Galactic Cosmic-Rays Accelerators : AG is leading the analysis on the gamma-ray emission of SNRs observed by AGILE. This analysis produced the first unambiguous detection of emission from these objects in the high-energy gamma-rays band (100 MeV - 10 GeV). Indeed, thanks to the diffuse emission model (more accurate than the past models) and to the good angular resolution of AGILE, it was possible to resolve the morphology of several SNRs. The paper on the SNR IC443

[Tavani *et al.*(2010)] presents this investigation.

Moreover, AG has built a software able to model the gamma-ray emission from SNR, simulating the physics processes which cause acceleration and diffusion of cosmic rays close to these objects. The results were presented in the paper [Giuliani *et al.*(2010b)], in which the variation of the spatially resolved spectrum of the SNRs W28 is analyzed and interpreted. A similar approach has been used by AG in order to derive the expected gamma-ray emission from the PWN Vela X as reported in the paper [Pellizzoni *et al.*(2010)] published on Science.

The most prominent result of the investigation on Galactic CR accelerators, is the discovery of the first clear evidence of protons acceleration in a supernova remnant (the SNR W44). This result was published in [Giuliani *et al.*(2011)] and reported by an INAF/ASI press release and several national newspapers.

AG is also CoPI of the accepted proposal “A mini-survey at 5-8 GHz of Gamma-Ray selected SNRs” at the radiotelescope of Medicina (Bologna). This investigation is aimed to disentangle the leptonic component in the non-thermal spectrum of SNRs seen in gamma-ray band.

Study of the gamma-ray emission from GRBs: AG is first author of the study on the gamma-ray emission of the GRB 080514B [Giuliani *et al.*(2008)]. This has been the first GRB observed with a gamma-ray telescope of new generation. This has allowed to observe for the first time some peculiarity in the light curve, as the so-called “delayed emission”, subsequently confirmed by other GRB observation performed by the Fermi telescope. The GRB 080514B has also been the first one for which the redshift could be measured [Rossi *et al.*(2008)]. An ASI press release has been issued reporting these results.

AG led the analysis on the GRB 090510, the first short GRB seen in the high-energy gamma ray band [Giuliani *et al.*(2010a)]. The analysis revealed that the gamma-ray emission above 30 MeV is described by a power-law time decay of the flux of the type $t^{-1.3}$ and the spectrum was remarkably different from that of the prompt phase. AG is also first author of the preliminary analysis of the remarkable GRB 100724B [Giuliani *et al.*(2010c)].

Finally AG has analyzed the XMM observations of the bright afterglow of GRB 120711A [Giuliani and Mereghetti(2014)]. These observations collected the largest dataset ever for a GRB afterglow. In order to exploit the richness of these data AG implemented a dedicated software for the spectral

characterization. The search for spectral lines didn't find any significant signal but the resulting upper-limits resulted to be the best ever derived for an X-rays GRB afterglow.

Other studies of high-energy sources: AG also performed a study on the SED of the blazar 3C 279 observed by AGILE while flaring during July 2007 [Giuliani *et al.*(2009)]. This study has been carried on using a multi-wavelength approach, combining gamma rays, X-rays, optics and radio data and using a theoretical model for the different components of the blazar SED.

AG has also actively participated in the study of other galactic and extragalactic sources seen by AGILE such as, for example, the gamma-ray pulsar PSRJ2021+3651, identified thanks to the AGILE data, for which AG obtained the flux and the spectrum as described in [Halpern *et al.*(2008)].

AG produced the hadronic model used for the interpretation of the gamma-ray flares seen by AGILE from Cyg-X3 [Piano *et al.*(2012), Tavani *et al.*(2009)].

AG participates to the study of the Terrestrial Gamma-ray flare with the AGILE/GRID tracker, creating a dedicate software for the reconstruction of events with incoming direction outside the field of view of the instrument [Marisaldi *et al.*(2010)].

AG has also been involved in the creation of the AGILE catalog of gamma-ray sources [Pittori *et al.*(2009)].

Moreover, AG participated to the analysis of the dust halo around the X-ray sources 1E 1547.0-5408 [Tiengo *et al.*(2010)] and Swift J1834.9-0846 [Esposito *et al.*(2013)] deriving the distance of the molecular clouds in the direction of these sources using the CO-line radio data.

Study of feasibility for future high-energy experiments : AG also participated to the NHXM team with the organization and analysis of Montecarlo simulations in order to evaluate the background rate in the Low and High energy detectors as a function of the design of the instrument and the anticoincidence [Strazzeri *et al.*(2011)].

AG is now member of the collaboration GAMMA 400 for the realization of a gamma-ray space telescope devoted to the observation in the largely unexplored band $E < 100$ MeV. For this experiment AG provided event reconstruction software of the gamma-ray photons converting in the tracker. AG also developed the scientific sky simulator for GAMMA 400.

Work for the CTA and ASTRI collaborations : AG has joined the

ASTRI collaboration in autumn 2013 and started working on both the software development and scientific studies. AG wrote the software package used for the scientific simulation *ASTRISIM*, optimized for the ASTRI Mini-array, precursor of the CTA instrument. It produces the expected events collected with an ASTRI observation, convolving the spectra of the gamma-ray sources with the instrument response files. AG coordinates the ASTRI scientific simulation activities, as described above, and is also responsible for the Supernova Remnants simulations, in order to study the ASTRI prospects for SNRs observations. The results of this work has been presented in several meetings (e.g. the CTA Consortium Meeting held in Turku, Finland, 4-8 May 2015)

Milano,
November 17, 2015

Andrea Giuliani

List of relevant publications

- [Acharya *et al.*(2015)] Acharya, B. S., Aramo, C., Babic, A., Barrio, J. A., Baushev, A., Becker Tjus, J., Berge, D., Bohacova, M., Bonardi, A., Brown, A., Bugaev, V., Bulik, T., Burton, M., Busetto, G., Caraveo, P., Carosi, R., Carr, J., Chadwick, P., Chudoba, J., Conforti, V., Connaughton, V., Contreras, J. L., Cotter, G., Dazzi, F., De Franco, A., de la Calle, I., de los Reyes Lopez, R., De Lotto, B., De Palma, F., Di Girolamo, T., Di Giulio, C., Di Pierro, F., Dournaux, J.-L., Dwarkadas, V., Ebr, J., Egberts, K., Fesquet, M., Fleischhack, H., Font, L., Fontaine, G., Förster, A., Fuessling, M., Garcia, B., Garcia López, R., Garczarczyk, M., Gargano, F., Garrido, D., Gaug, M., Giglietto, N., Giordano, F., Giuliani, A., Godinovic, N., Gonzalez, M. M., Grabarczyk, T., Hassan, T., Hörandel, J., Hrabovsky, M., Hrupec, D., Humensky, T. B., Huvelin, J., Jamrozy, M., Janecek, P., Kaaret, P. E., Katz, U., Kaufmann, S., Khélifi, B., Kluźniak, W., Kocot, J., Komin, N., Kubo, H., Kushida, J., Lamanna, G., Lee, W. H., Lenain, J.-P., Lohse, T., Lombardi, S., López-Coto, R., López-Oramas, A., Lucarelli, F., Maccarone, M. C., Maier, G., Majumdar, P., Malaguti, G., Mandat, D., Mazziotta, M. N., Meagher, K., Mirabal, N., Morselli, A., Moulin, E., Niemiec, J., Nievas, M., Nishijima, K., Nosek, D., Nunio, F., Ohishi, M., Ohm, S., Ong, R. A., Orito, R., Otte, N., Palatka, M., Pareschi, G., Pech, M., Persic, M., Pohl, M., Prouza, M., Quirrenbach, A., Rainó, S., Rodriguez Fernandez, G., Romano, P., Rovero, A. C., Rudak, B., Schovanek, P., Shayduk, M., Siejkowski, H., Sillanpää, A., Stefanik, S., Stolarczyk, T., Szanecki, M., Szepieniec, T., Tejedor, L. A., Telezhinsky, I., Teshima, M., Tibaldo, L., Tibolla, O., Tovmassian, G., Travnicek, P., Trzeciak, M., Vallania, P., van Eldik, C., Vercellone, S., Vigorito, C., Wagner, S. J., Wakely, S. P., Weinstein, A., Wierzcholska, A., Wilhelm, A., Wojcik, P., Yoshikoshi, T., 2015, “**The Cherenkov Telescope Array potential for the study of young supernova remnants**”, *Astroparticle Physics*, **62**, 152–164.
 WEB: <http://adsabs.harvard.edu/abs/2015APh....62..152A>

- [Esposito *et al.*(2013)] Esposito, P., Tiengo, A., Rea, N., Turolla, R., Fenzi, A., Giuliani, A., Israel, G. L., Zane, S., Mereghetti, S., Possenti, A., Burgay, M., Stella, L., Götz, D., Perna, R., Mignani, R. P., Romano, P., 2013, “**X-ray and radio observations of the magnetar Swift**

J1834.9-0846 and its dust-scattering halo", *MNRAS*, **429**, 3123–3132.

WEB: <http://adsabs.harvard.edu/abs/2013MNRAS.429.3123E>

[Giuliani and Mereghetti(2014)] Giuliani, A., Mereghetti, S., 2014, "**A search for lines in the bright X-ray afterglow of GRB 120711A**", *Astron. Astrophys.*, **563**, A6.

WEB: <http://adsabs.harvard.edu/abs/2014A%26A...563A...6G>

[Giuliani *et al.*(2004)] Giuliani, A., Chen, A., Mereghetti, S., Pellizzoni, A., Tavani, M., Vercellone, S., 2004, "**Gamma-Ray emission from the Galaxy: a new model for AGILE**", *Memorie della Societa Astronomica Italiana Supplement*, **5**, 135+.

WEB: <http://cdsads.u-strasbg.fr/abs/2004MSAIS...5..135G>

[Giuliani *et al.*(2006)] Giuliani, A., Cocco, V., Mereghetti, S., Pittori, C., Tavani, M., 2006, "**The AGILE on-board Kalman filter**", *Nuclear Instruments and Methods in Physics Research A*, **568**, 692–699.

WEB: <http://cdsads.u-strasbg.fr/abs/2006NIMPA.568..692G>

[Giuliani *et al.*(2008)] Giuliani, A., Mereghetti, S., Fornari, F., Del Monte, E., Feroci, M., Marisaldi, M., Esposito, P., Perotti, F., Tavani, M., Argan, A., Barbiellini, G., Boffelli, F., Bulgarelli, A., Caraveo, P., Cattaneo, P. W., Chen, A. W., Costa, E., D'Ammando, F., di Cocco, G., Donnarumma, I., Evangelista, Y., Fiorini, M., Fuschino, F., Galli, M., Gianotti, F., Labanti, C., Lapshov, I., Lazzarotto, F., Lipari, P., Longo, F., Morselli, A., Pacciani, L., Pellizzoni, A., Piano, G., Picozza, P., Prest, M., Pucella, G., Rapisarda, M., Rappoldi, A., Soffitta, P., Trifoglio, M., Trois, A., Vallazza, E., Vercellone, S., Zanello, D., Salotti, L., Cutini, S., Pittori, C., Preger, B., Santolamazza, P., Verrecchia, F., Gehrels, N., Page, K., Burrows, D., Rossi, A., Hurley, K., Mitrofanov, I., Boynton, W., 2008, "**AGILE detection of delayed gamma-ray emission from GRB 080514B**", *Astron. Astrophys.*, **491**, L25–L28.

WEB: <http://cdsads.u-strasbg.fr/abs/2008A&A...491L..25G>

[Giuliani *et al.*(2009)] Giuliani, A., D'Ammando, F., Vercellone, S., Vitorini, V., Chen, A. W., Donnarumma, I., Pacciani, L., Pucella, G., Trois, A., Bulgarelli, A., Longo, F., Tavani, M., Tosti, G., Impiombato, D., Argan, A., Barbiellini, G., Boffelli, F., Caraveo, P. A., Cattaneo,

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