

5th IAA Planetary Defense Conference

Gathering for Impact
15-19 May 2017
Tokyo, Japan

PROGRAM



DAY 1		Monday May 15	
0800		REGISTRATION	
0850		OPENING REMARKS: Conference Organizers	
0900		OPENING REMARKS: Hiroki Matsuo, IAA Vice-President	
0910		WELCOME: Hajime Funada, Member, House of Representatives of Japan	
0920	IAA-PDC-17-00-01	KEYNOTE: Saku Tsuneta, Director of Institute of Space and Astronautical Science, Japan	
0940	IAA-PDC-17-00-02	KEYNOTE: Johann-Dietrich Woerner, Director General, European Space Agency	
1000		BREAK	
		SESSION 1: KEY INTERNATIONAL AND POLITICAL DEVELOPMENTS	
		120 minutes	
		Session Organizers: Hajime Yano (Japan), Romana Kofler (UNOOSA)	
1020	IAA-PDC-17-01-01	An Overview of Developments related to NEOs within the Framework of the United Nations & the Committee on the Peaceful of Outer Space	Romana Kofler
1030	IAA-PDC-17-01-02	The International Asteroid Warning Network: History, -Background, and Current Status	Timothy Spahr
1045	IAA-PDC-17-01-03	The Space Mission Planning Advisory Group	Gerhard Drolshagen
1100	IAA-PDC-17-01-04	SMPAG Working Group on Legal Issues in Planetary Defense	Line Drube
1115	IAA-PDC-17-01-05	Advancement of Planetary Defense in the United States	Lindley Johnson
1130	IAA-PDC-17-01-06	Activities in Russia On NEO: Progress in Instrumentation, Study of Consequences and Coordination	Boris Shustov
1145	IAA-PDC-17-01-07	The Near-Earth Object Segment of ESA's Space Situational Awareness Programme - Achievements and Outlook for Period 3	Detlef Koschny
1200	IAA-PDC-17-01-08	Planetary Defense Activity in Japan	Makoto Yoshikawa
1215		LUNCH	
		SESSION 2: ADVANCEMENTS AND PROGRESS IN NEO DISCOVERY	
		135 Minutes	
		Session Organizers: Alan Harris (U.S.), Giovanni Valsecchi	
1315	IAA-PDC-17-02-01	NEA Population and Current Survey Status	Alan Harris
1330	IAA-PDC-17-02-02	Linking the Isolated Tracklet Astrometry	Robert Weryk
1345	IAA-PDC-17-02-03	SCOUT: Short-Arc Orbit Analysis and Hazard Assessment for Newly Discovered Asteroids	Davide Farnocchia
1400	IAA-PDC-17-02-04	Improved NEO Astrometry with the GAIA CATALOG: Application to Apophis	David Tholen
1415	IAA-PDC-17-02-05	The PAN-STARRS Search for Near Earth Objects	Richard J. Wainscoat
1430	IAA-PDC-17-02-06	ATLAS	John Tonry
1445	IAA-PDC-17-03-02	Deep Ecliptic Patrol of the Southern Sky: Round-the-Clock Census and Survey of Near Earth Asteroids in the Southern Hemisphere	Hong-Kyu Moon

1500	IAA-PDC-17-02-08	Projected Near-Earth Object Discovery Performance of LSST	Steven Chesley
1515	IAA-PDC-17-02-09	Contributions to Observations of Near-Earth Objects by a Wide-Field CMOS Camera Tomo-e Gozen	Ryou Ohsawa
1530		BREAK	
1545		INJECT & DISCUSSION: Press Release #1	
1715		Presentation of recommendations	
1800		ADJOURN DAY 1	
		WELCOME RECEPTION (6 to 8 PM, accompanying persons invited)	

DAY 2		Tuesday May 16	
0850		INTRODUCTORY REMARKS	
		SESSION 3: NEO CHARACTERIZATION RESULTS 240 minutes Session Organizers: Line Drube, Alan Harris (DLR)	
0900	IAA-PDC-17-03-01	The Italian contribution to the NEOShield-2 EU project: Results of the first year of activity	Simone Ieva
0915	IAA-PDC-17-02-07	Status of the Catalina Sky Survey for Near-Earth Objects	Eric Christensen
0930	IAA-PDC-17-03-03	Ground-based radar observations of potentially hazardous asteroids	Patrick Taylor
0945	IAA-PDC-17-03-04	Goldstone and Arecibo radar observations of (99942) Apophis in 2012-2013	Marina Brozovic
1000	IAA-PDC-17-03-05	Radar Observations of NEO by Quasar VLBI Network	Yuri Medvedev
1015	IAA-PDC-17-03-06	Arecibo Radar Characterization of 138971 (2001 CB21), a Flyby Target for the DART Spacecraft	Michael W. Busch
1030		BREAK	
1100	IAA-PDC-17-03-07	Physical characterization of NEA 2012 TC4	William Ryan
1115	IAA-PDC-17-03-08	Relevance of Thermal Inertia to Planetary Defense	Alan Harris
1130	IAA-PDC-17-03-09	Results of Hayabusa and Hayabusa 2	Makoto Yoshikawa
1145	IAA-PDC-17-03-10	Cohesive strength of 65803 Didymos, the target of the AIDA Mission	Yun Zhang
1200	IAA-PDC-17-03-11	Assessment of asteroid shapes produced after catastrophic disruption	Oliver Barnouin
1215	IAA-PDC-17-03-12	The ESA SSA-NEO System evolution	Ettore Perozzi
1230		LUNCH	
1330	IAA-PDC-17-03-13	New observations for (3200) Phaethon and analysis results	Xiaobin Wang
1345	IAA-PDC-17-03-14	Near Earth Asteroid Characterization for Threat Assessment	Jessie Dotson
1400	IAA-PDC-17-03-15	Size and orbital distribution of interplanetary dusts associated with near-earth asteroids by mu radar meteor head echo observation	Shinsuke Abe
1415		BREAK	

SESSION 4: DEFLECTION AND DISRUPTION MODELS & TESTING			
135 minutes			
Session Organizers: Brent Barbee, Patrick Michel			
1445	IAA-PDC-17-04-01	Integrated Blowoff and Breakup Calculations for Asteroid Deflection by Nuclear Ablation	Megan Bruck-Syal
1500	IAA-PDC-17-04-02	An Overview of the Los Alamos Project Supporting Planetary Defense Studies	Robert P. Weaver
1515	IAA-PDC-17-04-03	Characteristics of a High-Power Ion Beam Deflection System Necessary to Deflect the Hypothetical Asteroid 2017 PDC	John R. Brophy
1530	IAA-PDC-17-04-04	Asteroid De-Spin and Deflection Strategy using a Solar-Sail Spacecraft with Reflectivity Control Devices	Shota Kikushi
1545	IAA-PDC-17-04-05	New Multiple Kinetic-Energy Impactor Vehicle (MKIV) Mission Concept for Disrupting/Pulverizing Small Asteroids	Bong Wie
1600		BREAK	
1630		INJECT & DISCUSSION: PRESS RELEASE #2	
1730		Presentation of recommendations	
1800		ADJOURN DAY 2	
1800		POSTER RECEPTION (6 to 8 PM)	

DAY 3			
Wednesday May 17			
0850		INTRODUCTORY REMARKS	
		Session 4: Continued	
0900	IAA-PDC-17-04-06	Impact Simulations in support of the Double Asteroid Redirection Test (DART) and the Asteroid Impact and Deflection Assessment (AIDA)	Angela M. Stickle
0915	IAA-PDC-17-04-07	Laboratory and Numerical Experiments of Impact Generated Waves in Agglomerated Asteroids	Gonzalo Tancredi
0930	IAA-PDC-17-04-08	Modeling Kinetic Impactors on a Rubble Pile Asteroid	J. Michael Owen
0945	IAA-PDC-17-04-09	Benchmarking Asteroid-Deflection Experiments	Tane P. Remington
1000		BREAK	
		SESSION 5: MISSION & CAMPAIGN DESIGNS (240 minutes)	
		Session Organizers: Nahum Melamed, Marco Tantardini, Makoto Yoshikawa	
1030	IAA-PDC-17-05-17	Directed Energy for Planetary Defense	Philip M. Lubin
1043	IAA-PDC-17-05-01	Hayabusa2 – Sample Return and Kinetic Impact Mission to Near-Earth Asteroid Ryugu	Yuichi Tsuda
1056	IAA-PDC-17-05-02	Asteroid Impact And Deflection Assessment (AIDA): The Double Asteroid Redirection Test (DART) Mission Overview	Cheryl Reed
1109	IAA-PDC-17-05-03	Asteroid Impact and Deflection Assessment (AIDA): The Double Asteroid Redirection Test (DART) Mission Technical Update	Andrew F. Cheng

1122	IAA-PDC-17-05-04	Extension of the DART Mission to Kinetic Deflection	Brian L. Kantsiper
1135	IAA-PDC-17-05-05	Asteroid Impact Mission: Minimum System Design to Support Planetary Defense Demonstration	Ian Carnelli
1148	IAA-PDC-17-05-06	Asteroid Impact Mission: Performing Binary Asteroid Investigation and Supporting Planetary Defense	Patrick Michel
1201	IAA-PDC-17-05-08	Enhanced Gravity Tractor Derived from the Asteroid Redirect Mission for Deflecting Hypothetical Asteroid 2017PDC	Daniel D. Mazanek
1214	IAA-PDC-17-05-09	Asteroid Deflection Campaign Design for Scenarios with Decade-Long Warning Times	Anastassios Petropoulos
1227		LUNCH	
1330	IAA-PDC-17-05-10	Spacecraft Mission Design for the Mitigation of the 2017PDC Hypothetical Asteroid Threat	Brent W. Barbee
1343	IAA-PDC-17-05-11	NEOShield-2: Overview and Results So Far	Albert Falke
1356	IAA-PDC-17-05-12	NEOT ω IST: A Relatively Inexpensive Kinetic Impactor Demonstration Mission Concept	Line Drube
1409	IAA-PDC-17-05-13	NEOT ω IST – Design Study of a Kinetic Impactor Demonstration Mission Featuring NEO Spin Change and Observer Sub-Spacecraft	Killian Engel
1422	IAA-PDC-17-05-14	NEO Mitigation Mission Assurance	Curtis Iwata
1435	IAA-PDC-17-05-15	Concurrent Engineering Methodology for a Near Earth Object Impactor Mission	Nate Byerly
1448	IAA-PDC-17-05-16	Deflection of Fictitious Asteroid 2017PDC: Ion Beam vs. Kinetic Impactor	Claudio Bombardelli
1501	IAA-PDC-17-05-18	Parameter-Space Study of Kinetic-Impactor Mission Design	Alexandre Payez
1514	IAA-PDC-17-05-19	Soil to Sail – Asteroid Landers on Near-Term Sailcraft as an Evolution of the Gossamer Small Spacecraft Solar Sail Concept for In-Situ Characterization	Jan Thimo Grundmann
1527			2-min Posters
1540		BREAK	
1555		INJECT & DISCUSSION: Press release #3	
1725		Presentations of recommendations	
1800		ADJOURN DAY 3	

DAY 4		Thursday May 18	
0830		INTRODUCTORY REMARKS	
		SESSION 6: IMPACT CONSEQUENCES (135 minutes) Session Organizers: Mark Boslough, David Morrison	
0845	IAA-PDC-17-06-01	Comparison of Damage from Hydrocode Simulations of an Asteroid Airburst or Impact on Land, in Deep, or in Shallow Water	Darrel Robertson
0900	IAA-PDC-17-06-02	Ablation and Heating During Atmospheric Entry and its Effect on Airburst and Impact Risk	Eric C. Stern
0915	IAA-PDC-17-06-03	Modeling the Atmospheric Breakup of Varied Asteroid Structures: Inferences for the Chelyabinsk Meteor and Risk Assessment Applications	Lorien Wheeler
0930	IAA-PDC-17-06-04	Contribution of Asteroid Generated Tsunami to the Impact Hazard	David Morrison
0945	IAA-PDC-17-06-05	Airburst-Generated Tsunami by Various Coupling Mechanisms	Mark Boslough
1000	IAA-PDC-17-06-06	Three-Dimensional Simulations of Oblique Asteroid Impacts into Water	Galen R. Gisler
1015	IAA-PDC-17-06-07	Simulation of PDC2017 Asteroid Entry, Water Impact, Hazard and Consequences on Japan's East and West Coasts	Souheil Ezzedine
1030	IAA-PDC-17-06-08	Immediate Effects of Asteroid Impacts on the Human Population	Clemens Rumpf
1045	IAA-PDC-17-06-09	Ensemble Risk Assessment in Support of the 2016 NEO Science Definition Team	Donovan Mathias
1100		BREAK	
		SESSION 7: DISASTER RESPONSE (60 minutes) Session Organizers: Lindley Johnson, Barbara Jennings	
1130	IAA-PDC-17-07-01	Shelter-In-Place as an Effective Means of Civil Protection	Mark Boslough
1145	IAA-PDC-17-07-02	Community level Emergency Preparedness for Disasters – A model to supplement Remote Sensing	Venkataramaiah Jagannatha
1200	IAA-PDC-17-07-03	Impact threat exercises - Interfacing with emergency response agencies	Detlef Koschny
1215	IAA-PDC-17-07-04	The Third FEMA/NASA Near-Earth Object Impact Tabletop Exercise	Paul W. Chodas
1230		LUNCH	
		SESSION 8: IMPACT RISK ASSESSMENT & DECISION TO ACT (105 minutes) Session Organizers: Victoria Friedensen, Gerhard Drolshagen	
1330	IAA-PDC-17-08-01	The Politics and Process of Planetary Defense	Avishai Melamed
1345	IAA-PDC-17-08-02	NEO Impact Mitigation Decision Steps and Triggers	Nahum Melamed
1400	IAA-PDC-17-08-03	Short Term Threat Response Requires Long Term Preparation	Joseph A. Nuth
1415	IAA-PDC-17-08-04	The Distribution of Required Deflection Impulses as a Function of Time Before Impact for Earth Impacting Asteroids	Edward Lu
1430	IAA-PDC-17-08-05	Impact Corridor Visualizer Tool for ESA	Fabrizio Bernardi
1445	IAA-PDC-17-08-06	Deciding to Act: Summary of NASA's Planetary Defense Coordination Office Activities to Define Thresholds for Government Decisions to Aid in Emergency Preparedness and Response	Victoria Friedensen

1500	IAA-PDC-17-08-07	Measuring the Performance of Impact Monitoring	Andrea Milani
1515	IAA-PDC-17-08-08	Strengthening Global Collaboration and REDUCING the Risk of Defection of a Cooperating Nation in Planetary Defense	Nikola Schmidt
1530		BREAK	
		SESSION 9: PUBLIC EDUCATION & COMMUNICATION (60 minutes) Session Organizers: Alex Karl, Ian Carnelli	
1600	IAA-PDC-17-09-01	Considering All Stakeholders: Communicating with Various 'Publics' About the Asteroid Hazard and an Impact Event	Melissa Wiehenstroer
1615	IAA-PDC-17-09-02	Application of Machine Learning for Planetary Defense – Three Case Studies	James Parr
1630	IAA-PDC-17-09-03	Public Communication Using 5 Steps to Prevent Asteroid Impact	Bruce Betts
1645	IAA-PDC-17-09-04	A Knowledge Framework for Smart Discovery of Planetary Defense Resources	Myra Bambacus
1700		INJECT: Press Release #4	
1715		ADJOURN DAY 4	
		CONFERENCE BANQUET	

DAY 5		Friday May 19	
0850		INTRODUCTORY REMARKS	
		SESSION 10: THREAT RESPONSE EXERCISE	
0900		INJECT & DISCUSSION (Press Release #4)	
1000		Presentations from Focus Group	
1030		BREAK	
1100		INJECT & DISCUSSION: Press Release #5	
1120		Focus Group Discussion	
1230		LUNCH	
1345		FEEDBACK FROM FOCUS GROUPS	
1430		DISCUSSION: LESSONS LEARNED AND RECOMMENDATIONS	
1530		CONFERENCE ENDS	

POSTERS		
Posters SESSION 2: ADVANCEMENTS AND PROGRESS IN NEO DISCOVERY		
Session Organizers: Alan Harris (U.S.), Giovanni Valsecchi		
IAA-PDC-17-02-P01	Observational Activities at ESA's SSA-NEO Coordination Centre	Marco Micheli
IAA-PDC-17-02-P02	System of Observation of Day-time Asteroids (SODA)	Boris Shustov
IAA-PDC-17-02-P03	INASAN NEO finder (INF) project	Sergey Naroenkov
IAA-PDC-17-02-P04	TLS Participation in MPC's NEO Confirmation Program	Bringfried Stecklum
IAA-PDC-17-02-P05	Optical Wide-field patrol Network (OWL-Net): Characterization of Earth Close Approaching PHAs	Myung-Jin Kim
IAA-PDC-17-02-P06	Klenot Project in the Framework of ESA-SSA NEO Programme	Jana Ticha
IAA-PDC-17-02-P07	NEO Mineral Sources Usage for Electrical Power Production	Ankita Vashishtha
IAA-PDC-17-02-P08	Prioritisation of Near-Earth Asteroid Follow-Up Observations	Dora Fohring
IAA-PDC-17-02-P09	Organization and Promotion of Asia-Pacific Asteroid Observation Network (APAON)	Shin-Ishiro Okumura
IAA-PDC-17-02-P10	High-Precision Follow-Up Observations of Near-Earth Objects	Yudish Ramanjooloo
IAA-PDC-17-02-P11	Modeling the Joined Performance of the PAN-STARRS1 and PAN-STARRS2 Telescopes	Eva Lilly Schunova
IAA-PDC-17-02-P13	The PAN-STARRS2 System and the PS1 Reference Catalog: Implications for NEO Discovery and Characterization	Kenneth Chambers
IAA-PDC-17-02-P14	Current Activities and the Future Plan of BISEI Spaceguard Center	Tomoko Fujiwara
IAA-PDC-17-02-P15	Exploiting GAIA Asteroid Alerts	Daniel Hestroffer
IAA-PDC-17-02-P16	Shoemaker NEO Grants: Upgrading NEO Observational Capability	Bruce Betts
IAA-PDC-17-02-P17	Effects of the First Gaia Data Release on Orbit Determination and Impact Monitoring of Near-Earth Asteroids	Federica Spoto
IAA-PDC-17-02-P18	Using the GAIA Astrometric Grid to Refine NEO Orbits	Martin Elvis
IAA-PDC-17-02-P19	Towards a Network of Amateur Astronomers Relying on an Innovative Telescope	Jean-Yves Prado
Posters SESSION 3: NEO CHARACTERIZATION RESULTS		
Session Organizers: Line Drube, Alan Harris (DLR)		
IAA-PDC-17-03-P02	NEOSHIELD-2 European Project: Compositional Characterization of Small NEOs	Maria Antonietta Barucci
IAA-PDC-17-03-P03	Analysis of Natural Landing Trajectories for Passive Landers in Binary Asteroids: A Case Study for (65803) 1996 GT DIDYMOS	Onur Celik
IAA-PDC-17-03-P04	A Possible Signature of Split Event on (3200) Phaethon	Daisuke Kinoshita
IAA-PDC-17-03-P05	Meteoroid Bulk Density and Cephecha Types	Rhiannon Blaauw
IAA-PDC-17-03-P06	Possible Collisions of Asteroids with the Earth	Maria A. Borukha
IAA-PDC-17-03-P07	Observation of Near-Earth Object (1566) Icarus and the Split Candidate 2007 MK6	Seitaro Urakawa
IAA-PDC-17-03-P08	New Observations for (3200) Phaethon and Analysis Results	Xiaobin Wang
IAA-PDC-17-03-P09	DynAstVO: The Europlanet Orbital Near-Earth Asteroid Database	Josselin Desmars
IAA-PDC-17-03-P10	Distant Composition Detection: Determining NEO Makeup Remotely	Jonathan Madajian

IAA-PDC-17-03-P11	Observation of Possible Breakup Near-Earth Asteroids	Ryou Umehara
IAA-PDC-17-03-P12	Modified Dust Trail Model for Forecasting Earth Impactors	Masashi Imamura
IAA-PDC-17-03-P13	Asteroid Shapes and Rotational Properties Based on Lightcurve Analysis	Maria Gritsevich
IAA-PDC-17-03-P15	The Effects of Non-Gravitational Perturbations on Potentially Hazardous Objects' Trajectories and Earth Approach Parameters	Adam H. Greenberg
IAA-PDC-17-03-P16	Ground-Based Radar Observations of Human Space Flight Accessible Targets	Anne K. Virkki
IAA-PDC-17-03-P17	Integration and Validation of NEO systems within the ESA SSA Preparatory Programme	Arturo Vinue Visus
IAA-PDC-17-03-P18	In-Site Determination of Asteroid Thermal Inertia using the MASCOT Radiometer	Jan Thimo Grundmann
IAA-PDC-17-03-P19	Directed Energy Deflection Laboratory Measurements of Common Space Based Targets	Travis Brashears
IAA-PDC-17-03-P20	A Simple Method for Probing the Strength of an Asteroid	Daniel J. Scheeres
IAA-PDC-17-03-P21	Uncertainty Propagation in the N-body Problem using Dromo Elements	Javier Hernando-Ayuso
IAA-PDC-17-03-P22	CROWN: Constellation of Heterogeneous Wide-Field NEO Surveyors	Zhuoxi Huo
Posters SESSION 4: DEFLECTION AND DISRUPTION MODELS & TESTING Session Organizers: Brent Barbee, Patrick Michel		
IAA-PDC-17-04-P01	Measuring Ejecta Characteristics and Momentum Transfer in Experimental Simulation of Kinetic Impact	Martin Schimmerohn
IAA-PDC-17-04-P02	Hypervelocity Spacecraft Guidance Control Analysis to Intercept Small Diameter Objects	Melak Zebenay
IAA-PDC-17-04-P03	Asteroid Deflection via Neutral Beam Emitting Spacecraft	Anthony J. DeCicco
IAA-PDC-17-04-P04	Magnetic Tractor	William Brown
IAA-PDC-17-04-P05	Earth and Moon Based Directed Energy Systems for Planetary Defense	Nikola Schmidt
IAA-PDC-17-04-P06	The Projectile Shape and Material Effect on the Momentum Transfer for Asteroid Orbit Change	Daisuke Yokoo
IAA-PDC-17-04-P07	Systematic Planning Method of Disruption of Rubble Pile Asteroids by Natural Vibration Mode Analysis	Toshihiro Chujo
IAA-PDC-17-04-P08	Calculating the Momentum Enhancement Factor for Simulations of Kinetic-Impacts in Asteroid Deflection	Tamra Heberling
IAA-PDC-17-04-P09	The Directed Energy Comet Deflection Process	Qicheng Zhang
IAA-PDC-17-04-P10	Modeling Potential Outcomes of the Dart Impact Using CTH	Emma S. G. Rainey
IAA-PDC-17-04-P11	The Deflector Selector: A Machine Learning Framework for Prioritizing Deflection Technology Development	Adam H. Greenberg

Posters SESSION 5: MISSION & CAMPAIGN DESIGNS Session Organizers: Nahum Melamed, Marco Tantardini, Makoto Yoshikawa		
IAA-PDC-17-05-P01	Studies of Short Time Response Options for Potentially Hazardous Objects: Current and Forthcoming Results	Brent W. Barbee
IAA-PDC-17-05-P03	Near Earth Asteroids Deflection Mission Using Electric Solar Wind Sail Kinetic Impactor	Kohei Yamaguchi
IAA-PDC-17-05-P04	The DART Terminal Guidance Phase	Brian L. Kantsiper
IAA-PDC-17-05-P05	THE HIGH-FIDELITY ASTEROID DEFLECTION EVALUATION SOFTWARE (HADES): ASSESSING THE IMPACT OF ENVIRONMENTAL AND SYSTEM UNCERTAINTIES ON THE ASTEROID'S THREAT MITIGATION OF 2017 PDC THROUGH SLOW PUSH METHODS	Massimo Vetrivano
IAA-PDC-17-05-P06	Proximity Operations by the Asteroid Impact and Deflection Assessment (AIDA) mission	Olivier S. Barnouin
IAA-PDC-17-05-P07	The Third FEMA/NASA Near-Earth Object Impact Tabletop Exercise	Paul W. Chodas
IAA-PDC-17-05-P08	Asteroid Impact Mission: Minimum System Design to Support Planetary Defense Demonstration	Ian Carnelli
IAA-PDC-17-05-P09	Kinetic Impactor GNC System Design and End-to-End Validation	Marc Chapuy
IAA-PDC-17-05-P10	NEOSHIELD-2: Overview and Results So Far	Albert Falke
IAA-PDC-17-05-P11	Moon-Based Planetary Defense Operations	Thomas Miyano
IAA-PDC-17-05-P12	Design of Trajectories for Asteroid Impact in the Earth-Moon System Using the Pseudostate Theory	Hongwei Yang
IAA-PDC-17-05-P13	New Smoothing Optimization Technique for Continuous Low-Thrust Mission to Capture the Outer Planet	Mohammadreza Saghmanesh
IAA-PDC-17-05-P14	MASCOT2, a Lander to Characterize the Target of an Asteroid Kinetic Impactor Deflection Test Mission	Jens Biele
IAA-PDC-17-05-P15	Orbital Dependencies of Ejecta from the Dart Impact on the Secondary of 65803 DIDYMOS	Yu Yang
IAA-PDC-17-05-P16	Keyhole Maps for Post Deflection Impact Risk Assessment	Siegfried Eggli
IAA-PDC-17-05-P17	NEOT!IST: Determining the Momentum Enhancement	Siegfried Eggli
IAA-PDC-17-05-P18	Radar Package for a Direct Observation the Asteroid's Structure from Deep Interior to Regolith	Alain Herique
IAA-PDC-17-05-P19	Trajectory Design for Observing NEA with Different Mineralogies	Zhemini Chi
IAA-PDC-17-05-P20	NEOSHIELD-2: Optical Navigation for Near-Inertial Hovering at Close Proximity of Very Small Asteroids	Simon Delchambre
IAA-PDC-17-05-P21	Nano-Landers for the Geophysical Exploration of Near Earth Objects	Ozgun Karatekin
IAA-PDC-17-05-P22	Responsive Development of Optimized Small Spacecraft through Balanced Ad-hoc and Strategic Re-Use with Model-Based System Engineering for Planetary Defence, Science and Emerging Applications	Jan Thimo Grundmann
IAA-PDC-17-05-P23	Qualification Tested Technologies of the Gossamer-1 Solar Sail Deployment Demonstrator for Planetary Defence and Small Solar System Body Science and Applications	Jan Thimo Grundmann

IAA-PDC-17-05-P24	GoSolAr: Large-scale Deployable Photovoltaics for Planetary Defence and Small Solar System Body Applications using Gossamer Deployment Technologies	Jan Thimo Grundmann
IAA-PDC-17-05-P25	Experimental Studies of Space Weathering Effects on Thin Membranes in Planetary Defence Applications and Asteroid Surface Materials by a Complex Irradiation Facility	Jan Thimo Grundmann
IAA-PDC-17-05-P26	ASPECT (Asteroid Spectral Imaging Mission)	Tomas Kohout
IAA-PDC-17-05-P27	OpGrav - Implications for Planetary Defense	Ryan H. Mitch
IAA-PDC-17-05-P28	Laser Retroreflectors as NEO Tracking and Geodetic Targets	Simone DellAgnello
IAA-PDC-17-05-P31	NEOSHIELD-2: Technology Readiness Level Assessment for Visual Based Guidance, Navigation and Control Algorithms Applicable to Small Solar System Body Spacecraft Missions	Tobias Ziegler
IAA-PDC-17-05-P32	SCORPION: A Low-Cost Multi-Phase and Multi-Objective Asteroid Mission	Mariella Graziano
IAA-PDC-17-05-P33	AIM Autonomous GNC for Close Proximity Operations	Andrea Pellacani
IAA-PDC-17-05-P34	Numerical Modeling of Interactions of a Lander with Low-Gravity Asteroid Regolith Surfaces	Florian Thuillet
IAA-PDC-17-05-P35	Observations of Lunar Impact Flashes and NEOs from Earth-Moon L2 HALO Orbit	Ryota Fuse
IAA-PDC-17-05-P36	Integrated Air and Missile Defence under Spatial Grasp Technology	Peter Sapaty
IAA-PDC-17-05-P37	Last-Minute Semi-Analytical Asteroid Deflection by Nuclear Explosion	Javier Hernando-Ayuso
IAA-PDC-17-05-P38	An Exploration of the Technical Challenges of Deploying a Nuclear Explosive Device Against a Potentially Hazardous Object	Catherine S. Plesko
	Posters SESSION 6: IMPACT CONSEQUENCES Session Organizers: Mark Boslough, David Morrison	
IAA-PDC-17-06-P01	Kinetic Damage from Meteorites	William J. Cooke
IAA-PDC-17-06-P02	Sea-Water Tsunami Hazard and Risk Against Life-Planet Earth by Asteroid Impact on Ocean Water	Yasunori Miura
IAA-PDC-17-06-P03	Atmospheric Trajectory and Recovery of the Osceola Meteorite (January 24, 2016)	Tomas Kohout
IAA-PDC-17-06-P04	HAYABUSA2 Impact Experiment: Fate of the Asteroid Ryugu Ejecta	Stefania Soldini
IAA-PDC-17-06-P05	In Pursuit of Improving Airburst and Ground Damage Predictions: Recent Advances in Multi-Body Aerodynamic Testing and Computational Modeling Validation	Ethiraj Venkatapathy
IAA-PDC-17-06-P06	Simulation-Based Height of Burst Map for Asteroid Airburst Damage Prediction	Michael J. Aftosmis
IAA-PDC-17-06-P07	Best-Case Appraisals of Impact Damage to Planet Earth by Natural Objects Enabled by Rendezvous Missions	James O. Arnold
IAA-PDC-17-06-P08	A Concept of Hazardous NEO Detection and Impact Warning System	Toshinori Ikenaga

	Posters SESSION 7: DISASTER RESPONSE	
	Session Organizers: Mariella Graziano, L.A. Lewis	
IAA-PDC-17-07-P01	The U.S. Geological Survey's Capabilities Related to Planetary Defense	Laszlo Kestay
IAA-PDC-17-07-P02	Integrated International Strategy for Mitigating Effects of Minor Asteroid Impacts Through a Collaborative and Effective Early Warning and Disaster Response System	Mina Takla
IAA-PDC-17-07-P03	Southampton Asteroid Impact Hazard Scale	Clemens M. Rumpf
	Posters SESSION 8: IMPACT RISK ASSESSMENT & DECISION TO ACT	
	Session Organizers: Victoria Friedensen, Gerhard Drolshagen	
IAA-PDC-17-08-P01	Big Data Used as a Tool for International Cooperation in International Policies Against NEO	Jairo Becerra
IAA-PDC-17-08-P02	Potential US Department of Defense Organizational Responses to 2017 PDC	Brent Ziarnick
	Posters SESSION 9: PUBLIC EDUCATION & COMMUNICATION	
	Session Organizers: Alex Karl, Ian Carnelli	
IAA-PDC-17-09-P01	Findings and Recommendations of the The READI Project: The 3rd International Space University Planetary Defense Project 2015	Nikola Schmidt
IAA-PDC-17-09-P02	Klet Observatory : 25 Years of Experience in NEO Public Education and Communication	Jana Ticha
IAA-PDC-17-09-P03	Meteor Observations as Big Data Citizen Science	Dejan Vinkovic



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