

8th IAA Planetary Defense Conference

3 - 7 April 2023, Vienna, Austria

Programme-at-a-glance

Day 1	Monday	3 April, 2023, Board-room D, Vienna International Centre (VIC)	
Start	Duration		Speaker / Presenter
9:50	0:10	Opening of the Conference	Conference Chairs
10:00	0:10	Welcoming Remarks: Mr Marius Ioan Piso, IAA Vice-President for Scientific Activities	IAA
10:10	0:10	Keynote Address: Mr Niklas Hedman, UNOOSA Acting Director	UNOOSA
CHAIRS: Ryan Park Ian Carnelli Richard Moissl		Session 1a: Space Mission Highlights - DART, LICIACube	Speaker / Presenter
10:20	0:10	DART Mission - Getting to Dimorphos impact and lessons learned	Elena Adams
10:30	0:10	Didymos and Dimorphos before, during, and after the DART impact	Andy Rivkin
10:40	0:10	Change in the mutual orbit of Dimorphos due to the DART impact	Shantanu Naidu
10:50	0:10	Determination of Dimorphos's Change in Velocity Resulting from the DART Kinetic Impact	Harrison Agrusa
11:00	0:10	Determination of Momentum Transfer to Dimorphos from the DART Kinetic Impact	Andrew Cheng
11:10	0:10	LICIACube: the witness of the DART impact	Elisabetta Dotto
11:20	0:15	Q&A / Discussion	
11:35	0:30	COFFEE BREAK	
CHAIRS: Ryan Park Ian Carnelli Richard Moissl		Session 1b: Space Mission Highlights (continued) - Hera, Hayabusa2, OSIRIS-REx/APEX	Speaker / Presenter
12:05	0:10	The ESA Hera Mission: Detailed Investigation of the NASA DART Impact Outcome and Characterization of the Binary Asteroid Didymos	Patrick Michel
12:15	0:10	The Hera mission	Ian Carnelli
12:25	0:10	What if Ryugu hits on Earth?	Satoshi Tanaka
12:35	0:10	Hayabusa2 Extended Mission: Hayabusa2#	Makoto Yoshikawa
12:45	0:10	Pre-encounter mission requirements to complement OSIRIS-APEX post-encounter-studies of the asteroid Apophis	Thomas Kohout
12:55	0:10	Q&A / Discussion	

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13:05	1:25	LUNCH	
CHAIRS: Romana Kofler Whilliam H. Ailor		Afternoon programme: Hypothetical Asteroid Impact Hazard Exercise: Decision-Making, Legal, Policy and Disaster Preparedness Implications	Speaker / Presenter
14:30	0:10	Introduction to IAWN, SMPAG, and The Hypothetical Impact Exercise	Kelly Fast
14:40	0:15	Decision Tree Presentation	Michael Byers
14:55	0:15	Legal and Policy Issues	Alissa Haddaji, David Koplow
15:10	0:25	IAWN: Presentation of hypothetical asteroid impact hazard scenario & potential impact consequences for Epoch 1	Paul Chodas, Lorien Wheeler, Kelly Fast
15:35	0:45	PANEL 1 for Decision-Makers (1.part)	
16:20	0:20	COFFEE BREAK	
16:40	0:05	SMPAG Epoch 2 Update Summary	Detlef Koschny
16:45	0:15	SMPAG: Presentation of space mission options analysis	Brent Barbee, Detlef Koschny
17:00	0:60	PANEL 1 for Decision-Makers (2.part), to include audience/media discussion/ Q&A	
18:00		END OF DAY 1	
18:00		Welcome reception and exhibition in the Rotunda, VIC	
20:00		END OF RECEPTION / EXHIBITION	

Day 2 Tuesday 4 April, 2023, Board-room D, Vienna International Centre (VIC)			
Start	Duration		Speaker / Presenter
9:00	0:05	Welcoming Remarks	Conference Chairs
CHAIRS: Lindley Johnson Detlef Koschny		Session 2: Key International and Policy Developments	Speaker / Presenter
9:05	0:08	Update on NASA's Planetary Defense Program	Lindley Johnson
9:13	0:08	Planetary Defense: Findings and Recommendations from the National Academies Planetary Science and Astrobiology Decadal Survey 2023 - 2032	Paul Abell
9:21	0:08	New Zealand's contribution to planetary defence	Michele Bannister
9:29	0:08	Proposal of Creation of a Planetary Defense Office in Brazil Based in Existing Capabilities	Ana Lucia Pegetti

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9:37	0:08	ESA's activities in Planetary Defence	Richard Moissl
9:45	0:08	JAXA activities in NEOs and planetary defence	Makoto Yoshikawa
9:53	0:08	Near-Earth Asteroid Defence (Lunar Exploration and Space Programme Centre, CNSA)	Qi Chen (virtual)
10:01	0:08	NEOROCKS: The 2020-2023 EU Programme for Planetary Defence	Elisabetta Dotto
10:09	0:08	How NASA's Planetary Defense Budget Grew by More Than 4000% in 15 Years: Lessons in Strategic Alignment	Casey Dreier
10:17	0:08	Current Activities in the Field of SSA: Contributions by the MOD Austria to the Ongoing Discussion	Norbert Frischauf
10:25	0:20	Q&A / Discussion	
10:45	0:25	Topic: Updated U.S. National Strategy for Planetary Defense	Matt Daniels
11:10	0:30	COFFEE BREAK	
11:40	1:00	PANEL 2/1 : National Security Preparedness Roles in Planetary Defence	
12:40	1:00	LUNCH	
13:40	0:20	Keynote Bhavya Lal, NASA Associate Administrator	NASA (virtual)
14:00	1:00	PANEL 2/2: UN & International Disaster Management	
15:00	0:15	Plans for the International Year of Planetary Defense	Doris Daou
CHAIRS: James M Bauer Kelly E. Fast		Session 3: NEO Discovery (16 talks plus 12 posters)	Speaker / Presenter
15:15	0:30	Observational Activities and Key Results from ESA's Planetary Defence Office	Marco Micheli
15:23	0:08	The Pan-STARRS Search for Near-Earth Objects	Richard Wainscoat
15:31	0:08	Catalina Sky Survey: NEO Discovery, Follow-Up and Beyond	Eric Christensen
15:39	0:08	Detection of small, hazardous asteroids by ATLAS and contemporaneous NEO surveys in the era of LSST	Larry Denneau
15:47	0:08	Surveying the interior secrets of the Solar System	T. Santana-Ros
15:55	0:08	Updated Digest2 – the NEO classification code	Peter Veres
16:03	0:08	JPL Scout's Imminent Impactor Warning Performance: 2022 EB5 and 2022 WJ1	Stephen Chesley
16:11	0:08	The two timing campaigns of the International Asteroid Warning Network	Davide Farnocchia
16:19	0:13	Q&A / Discussion	
16:32	0:10	BREAK	

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16:42	0:08	First Results of a Fireball Flux Measurement with the AllSky7 Fireball Network	Michael Fruhauf
16:50	0:08	Real-time synthetic tracking for near-Earth asteroids detection	Malin Stanescu
16:58	0:08	Near Earth Objects in the recent Isolated Tracklet File	Robert Weryk
17:06	0:08	Rubin Observatory LSST: Status, NEO Expectations, and Community Readiness	Mario Juric
17:14	0:08	ATLAS-Teide: the next generation of ATLAS units at Teide Observatory	Javier Licandro
17:22	0:08	ESA's Flyeye Telescope Network	Dora Fohring
17:30	0:08	The Near-Earth Object Surveyor Mission	Amy Mainzer
17:38	0:08	NEOMIR: A Space-Based Infrared Mission for NEO Detection, Characterisation, and Early Warning	Luca Conversi
17:46	0:14	Q&A / Discussion	
18:00		END OF DAY 2	
18:00		POSTER VIEWING, Rotunda/PHOTO taking	
20:00		END OF POSTER VIEWING IN THE ROTUNDA	

Day 3	Wednesday	5 April, 2023, Board-room D, Vienna International Centre (VIC)	
Start	Duration		Speaker / Presenter
9:00	0:05	Welcoming Remarks	Conference Chairs
9:05	0:20	Keynote Address: Rolf Densing, ESA Director of Operations	ESA
CHAIRS: James M Bauer Marina Brozović Andy Cheng		Technical Session 4a: NEO Characterization	Speaker / Presenter
9:25	0:08	Dydimos and Dimorphos surface and ejecta reflectance properties through DART and LICIACube imaging	Pedro Henrique Hasselmann
9:33	0:08	The Color Analysis Of Dimorphos Plume Produced By Dart Impact Using Liciacube-luke Data: Results On Physical Properties And Composition To Better Constrain Planetary Defence Efficiency	Giovanni Poggiali
9:41	0:08	Energy Dissipation in Didymos Prior to Hera's Arrival	Alex Meyer
9:49	0:08	Assessing The Capabilities And Limitations Of Flyby Missions For Planetary Defense Characterization	Jodi Berdis
9:57	0:08	Hypothetical Asteroid 2023 PDC Mass Measurement Via Doppler Gravimetry In A Reconnaissance Flyby	Ry Bull
10:05	0:08	IAWN Global Planetary Defense Campaigns: Lessons Learned	Michael Kelly

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10:13	0:08	Ground-based Planetary Radars: Current And Future Prospects	Joseph Lazio
10:21	0:08	The Long-term Impact Hazard Of km-sized Near-Earth Objects	Oscar Fuentes-Muñoz
10:29	0:08	An improved method for asteroid impact probability due to swarm intelligence algorithms	Andrew Koehler
10:37	0:13	Q&A / Discussion	
10:50	0:20	BREAK	
CHAIRS: James M Bauer Marina Brozović Andy Cheng		Technical Session 4b: NEO Characterization (continued)	Speaker / Presenter
11:10	0:08	Size And Albedo Distributions Of Near-earth Asteroids Observed By Neowise	Akash Satpathy
11:18	0:08	NEOROCKS Project: Spectrophotometry Of Small Near-Earth Asteroids	Maria Antonietta Barucci
11:26	0:08	Binary Systems Among Near-Earth Asteroids Observed Within the NEOROCKS project	Petr Pravec
11:34	0:08	NEO Orbits and Sizes From IOTA Occultation Observations	David Dunham
11:42	0:08	Characterization Of Near-Earth Objects Using Planetary Radar Observations And Numerical Modeling	Anne Virkki
11:50	0:08	Physical Characterization and Shape Model of 1998 OR2 Shows Its Surface is Heterogeneous	Maxime Devogèle
11:58	0:08	Reconstruction Of The Shape And Spin State Of Asteroid (99942) Apophis From Its Photometric Light	Josef Durech
12:06	0:08	Detecting Internal Shifts Within Apophis Across its Earth Flyby	Daniel Scheeres
12:14	0:16	Q&A / Discussion	
12:30	1:00	LUNCH	
13:30	1:00	Panel 3: Providing clear, concise, correct information to the public	
CHAIRS: Megan Bruck Syal Dawn Graninger Patrick Michel		Session 5: Deflection / Disruption Testing & Modeling	Speaker / Presenter
14:30	0:08	3D Characterization of the Ejecta Produced by the DART Impact	Tony Farnham
14:38	0:08	Modeling the DART Impact: Effects of Surface Morphology and Rubble Pile Structure on Deflection Observables	Emma Rainey
14:46	0:08	Deflecting rubble-pile asteroids: Lessons learned from the DART impact on Dimorphos	Sabina Raducan
14:54	0:08	Momentum Enhancement of Rubble Pile Simulants At 5 km/s	James Walker
15:02	0:08	Simulating the DART impact: Effects of spacecraft and boulder geometry on ejecta	Kathryn Kumamoto

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15:10	0:08	Spacecraft Geometry Effects for the DART Mission	Dawn Graninger
15:18	0:08	The Evolution of Shape: Designing the Next Generation of Kinetic Impactors	Patrick King
15:26	0:08	Extending NEO Deflection Formulae To High Fluences	Robert Managan
15:34	0:08	Initiating Nuclear Mitigation Mission Simulations with a Simplified X-Ray Energy Deposition Model	Mary Burkey
15:42	0:10	Q&A / Discussion	
15:52	0:20	BREAK	
CHAIRS: Marco Tantardini George Vardaxis (virtual) Bruno Victorino Sarli		Session 6: Space Mission & Campaign Design	Speaker / Presenter
17:12	0:08	Rapid-response Flyby Exploration using Deep Space Constellation deployed on Asteroid Flyby Cyclers	Naoya Ozaki
16:20	0:08	Planetary Defense Mission Campaign Design for the 2023 PDC Hypothetical Asteroid Impact Scenario	Brent Barbee
16:28	0:08	THEO & MUFN: Defending Earth Against the 2023 PDC Hypothetical Asteroid Impact	Melissa Buys
16:36	0:08	LUMIO: a CubeSat to detect meteoroid impacts on the lunar farside	Fabio Ferrari
16:44	0:08	Creating a Contact Binary via Spacecraft Impact to Near-Earth Binary Asteroid (350751) 2002 AW	Colby Merrill
16:52	0:08	Flyby Asteroid Reconnaissance (FLARE) mission to Apophis: A mission concept to Apophis before its Earth encounter to demonstrate flyby reconnaissance for planetary defense	Ronald Ballouz
17:00	0:08	Optimal Impulsive/Low-Thrust Trajectories for Asteroid Deflection via Kinetic Impact	Alessia Speziale
17:08	0:08	Low-Cost Mission Architectures To Small Bodies	Lorraine Fesq
17:16	0:08	Possibilities of Using a Spacecraft Located in the Vicinity of the Libration Point for Near-Earth Objects Exploration	Maxim Pupkov (virtual)
17:24	0:08	Prospects for Future Human Space Flight Missions to Near-Earth Asteroids	Brent Barbee
17:32	0:08	Apophis Pathfinder: A MILO Space Science Institute Smallsat Mission in Support of Science and Planetary Defense	Jim Bell
17:40	0:08	Development and Prospects of Chinese Near-Earth Asteroids Monitoring and Early Warning Capability System and International Cooperation (National Asteroid Monitoring and Early Warning Research Center, CNSA)	Fengyu Wang (virtual)
17:48	0:12	Q&A / Discussion	
18:00		END OF DAY 3	

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20:15-22:30	IMAX Movie: Asteroid Hunters & The Planetary Society Public Event at the Cineplexx Donau Zentrum
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Day 4	Thursday	6 April, 2023, Board-room D, Vienna International Centre (VIC)	
Start	Duration		Speaker / Presenter
9:00		Welcoming Remarks and Information about Conference Poll results	Conference Chairs
CHAIRS: Mark Boslough Jessie Dotson Christian Koerberl		Session 7A: Earth Impact Effects & Consequences (part A)	Speaker / Presenter
9:25	0:10	Predicting the Consequences of NEO Impacts on Earth	Robert Luther
9:35	0:10	Asteroid Impact Risk Across Transitional Hazard Regimes	Lorien Wheeler
9:45	0:10	Asteroid Impacts and Cascading Hazards	Timothy Titus
9:55	0:10	Machine learning for the prediction of local asteroid damages	Gregoire Chomette
10:05	0:10	Consequences of Asteroid Characterization on the State of Knowledge about Inferred Physical Properties and Impact Risk	Jessie Dotson
10:15	0:10	Numerical Modeling of Asteroid Ocean Impact: Preparing Pipeline for Future Scenario Modeling	Lauren Abrahams
10:25	0:10	2023 PDC Exercise: Global Tsunami From Land or Ocean Impact	Mark Boslough
10:35	0:10	Sensitivity Study of Impact Risk Model Results to Thermal Radiation Damage Model for Large Objects	Ashley Coates
10:45	0:10	Entry Angle Effects on the Ground Signature of the Chelyabinsk Superbolide	Jason Pearl
10:55	0:10	Advances in Entry Modeling for Impact Risk Assessment	Eric Stern
11:05	0:10	Accurate Characterization of Metre-sized Impactors Through Casual Bolide Observations – Novo Mesto Superbolide As Evidence for a New Class of High-Risk Objects	Denis Vida
11:15	0:10	Q&A	
11:25	0:20	BREAK	
CHAIRS: Rudolf Albrecht Leviticus L.A. Lewis Jan Osburg		Session 8: Disaster Management & Earth Impact Response	Speaker / Presenter
11:45	0:12	Results from the EU-ESA Workshop on NEO Imminent Impactors Warning Coordination	Juan L. Cano
11:57	0:12	Evacuation and shelter plans for asteroid impacts	Darrel Robertson
12:09	0:41	Q&A / Discussion	

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13:00	1:00	LUNCH	
CHAIRS: Doris Daou Alissa J. Haddaji Irmgard Marboe		Session 9: The Decision to Act: Political, Legal, Social, and Economic Aspects	Speaker / Presenter
14:00	0:08	To aid or not to aid, should it be a question: the geopolitical ethical concerns in PD missions	Sanchi Dhamija
14:08	0:08	Collective action problems in Planetary Defense	Jonathan Iwry
14:16	0:08	Legal Framework of the UNSC's role in decision and implementation of PD action	Krzysztof Nieweglowski
14:24	0:08	Legal Considerations on a regional security organisation for PD	Mag. Stephanie Stipsits
14:32	0:08	Diplomatic, Geopolitical and Economic Consequences of an impending asteroid threat	Laura Jamschon Mac Garry
14:40	0:08	Stressors on international cooperation and coordination in NEO threat mitigation and response	Chris Johnson
14:48	0:08	Planetary defense governance: from ad-hoc decision making to multilateral security regime	Nikola Schmidt
14:56	0:08	Legal complications of private planetary defense missions	Judith Jahnke
15:04	0:08	Proposing a holistic approach to an appropriate legal framework for planetary defence	George Kyriakopoulos
15:12	0:08	Popular Impact: Public Opinion and Planetary Defense Planning	Avishai Melamed
15:20	0:15	Q&A / Discussion	
15:35	0:20	BREAK	
15:55	1:00	Panel 4: Legal and Policy Issues for Planetary Defense	
CHAIRS: Mark Boslough Jessie Dotson Christian Koeberl		Session 7B: Earth Impact Effects & Consequences (part B)	Speaker / Presenter
16:55	0:10	High-Fidelity Blast Propagation Modeling For Hypothetical Asteroid 2023 PDC	Michael Aftosmis (virtual)
17:05	0:10	Tonga Tsunami Provides Data, Verification For Blast-generated Global Tsunami Modeling	Vasily Titov (virtual)
17:15	0:10	Atmospheric Breakup Behaviour Of 2022 WJ1	Peter Brown (virtual)
17:25	0:10	Computational Analysis Of Ground Effects From Bolide Disruption via the PI Method	Dharv Patel (virtual)
17:35	0:15	PI - Terminal Planetary Defense	Philip Lubin (virtual)
17:50		END OF DAY 4	
19:00		Conference Dinner at the Rathauskeller	

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Day 5		Friday	7 April, 2023	
Start	Durati on	VENUE - Austrian Academy of Sciences (Festsaal)		Speaker / Presenter
9:20		Welcoming remarks for Day 5		Conference Chairs
CHAIRS: Linda Billings (virtual) Doris Daou Alex Karl		Session 10: Public Education & Communication		Speaker / Presenter
9:25	0:08	Sorvegliati Spaziali – A Unique Communication Experience in Planetary Defense as a Possible Starting Point for the Italian Involvement in the International Year of Planetary Defense		Daria Guidetti, Caterina Boccato
9:33	0:08	Public Education Activities For Planetary Defense In Japan		Seitaro Urakawa (virtual)
9:41	0:08	Humans And Hazardous Asteroids - 30 Years Of Experience In Education And Communication		Milos Tichy
9:49	0:08	Debunking The Panic Myth And What It Means For NEO Communication Strategies		Alex Karl
9:57	0:08	Apophis As The Demon Serpent Of Darkness: Designing Communication Protocols For Misinformation And Conspiracy Theories In Planetary Defense		Robert Atchison
10:05	0:08	Towards a Robust and Resilient Mechanism for the Distribution of Information During an Asteroid Mitigation Event		Rudolf Albrecht
10:13	0:17	Q&A / Discussion		
10:30	1:30	DISCUSSION OF CONFERENCE HIGHLIGHTS & RECOMMENDATIONS; WRAP-UP		
12:00	1:00	Banquet - hosted by the Austrian Academy of Sciences and its Commission for Geosciences		
13:00		END OF CONFERENCE		
14:00		Museum Tour		
15:00		Museum Tour		