

PLUTO SCIENCE CONFERENCE, July 22-26, 2013

<i>Time/Date</i>	<i>DAY 1 Monday July 22, 2013</i>
8:00-8:30 AM	COFFEE and REGISTRATION
8:30-8:40	Welcome and Logistics: Alan Stern
8:40-8:50	John Sommerer
8:50-9:00	Jim Green
	INVITED SESSION: NEW HORIZONS (A Stern & H Weaver, chairs)
9:00-9:20	Tom Krimigis, REALIZING AN ELUSIVE GOAL: THE EXPLORATION OF PLUTO WITH NEW HORIZONS
9:30-9:50	Alan Stern, THE NEW HORIZONS MISSION TO THE PLUTO SYSTEM
9:50-10:20	Leslie Young, PLANS FOR NASA'S NEW HORIZONS ENCOUNTER WITH THE PLUTO SYSTEM
10:20-10:35	Richard Binzel, EARTH-BASED OBSERVING CAMPAIGN FOR THE NEW HORIZONS ENCOUNTER
10:35-10:50	COFFEE BREAK
10:50-11:10	Alan Stern, RALPH: THE PANCHROMATIC AND COLOR IMAGER AND INFRARED IMAGING SPECTROGRAPH ABOARD THE NEW HORIZONS SPACECRAFT
11:10-11:30	A. F. Cheng, LONG-RANGE RECONNAISSANCE IMAGER ON NEW HORIZONS
11:30-11:50	Alan Stern, ALICE: THE ULTRAVIOLET IMAGING SPECTROGRAPH ABOARD THE NEW HORIZONS SPACECRAFT
11:50-12:10	I. R. Linscott, THE NEW HORIZONS (NH) RADIO SCIENCE EXPERIMENT, REX
12:10-1:30	LUNCH
1:30-1:50	Ralph McNutt, PICK-UP IONS AT PLUTO: THE PLUTO ENERGETIC PARTICLE SPECTROMETER SCIENCE INVESTIGATION (PEPSSI)
1:50-2:10	David McComas, THE SOLAR WIND AROUND PLUTO (SWAP) INSTRUMENT ON NEW HORIZONS
2:10-2:30	Mihaly Horanyi, THE VENETIA BURNEY STUDENT DUST COUNTER ONBOARD NEW HORIZONS TO PLUTO
	KUIPER BELT CONTEXT (H Levison & W Grundy, chairs)
2:30-3:00	INVITED: Brett Gladman, THE DYNAMICAL CONTEXT OF PLUTO
3:00-3:30	INVITED: Cesar Fuentes, THE SIZE DISTRIBUTION OF THE KUIPER BELT
3:30-3:45	COFFEE BREAK
3:45-4:00	John Spencer, THE SEARCH FOR KBO FLYBY TARGETS FOR NEW HORIZONS
4:00-4:15	Alex Parker, LONG-RANGE KUIPER BELT OBJECT OBSERVATIONS: PROSPECTS AND SCIENTIFIC VALUE
4:15-4:30	Susan Benecchi, KBO LONG-RANGE CANDIDATE OBSERVATIONS WITH HST
4:30-4:45	Gustavo Beneditti-Rossi, ASTROMETRIC ANALYSIS OF 15 YEARS OF PLUTO OBSERVATION
4:45-5:15	INVITED: William McKinnon, PROVENANCE OF PLUTO: IMPLICATIONS FOR COMPOSITION AND STRUCTURE
5:15-5:30	Alain Doressoundiram, PROBING OUTER SOLAR SYSTEM SMALL BODIES WITH STELLAR OCCULTATIONS
5:30-5:45	Luke D. Burkhart, DEEP NON-LINEAR SEARCH FOR ADDITIONAL SATELLITES AROUND THE DWARF PLANET HAUMEA
5:45-6:00	A. S. Rivkin, DISTANT COUSINS: WHAT THE ASTEROIDS CAN TEACH US ABOUT THE PLUTO SYSTEM, AND VICE VERSA

PLUTO SCIENCE CONFERENCE, July 22-26, 2013

<i>Time/Date</i>	<i>DAY 2 Tuesday July 23, 2013</i>
8:00-8:15 AM	COFFEE
	ATMOSPHERES (D Strobel & F Bagenal, chairs)
8:15-8:45	INVITED: Emmanuel Lellouch, PLUTO'S ATMOSPHERE: CURRENT KNOWLEDGE AND OPEN QUESTIONS
8:45-9:15	INVITED: Darrell Strobel, PLUTO'S ATMOSPHERE: ESCAPE AND THE RELATIONSHIP TO ITS DENSITY AND THERMAL STRUCTURE
9:15-9:30	Richard French, A COMPARISON OF MODELS OF TIDES IN PLUTO'S ATMOSPHERE AND STELLAR OCCULTATION OBSERVATIONS
9:30-9:45	Bruno Sicardy, PLUTO'S ATMOSPHERIC PRESSURE FROM STELLAR OCCULTATIONS: 2002-2012
9:45-10:00	Michael J. Person, TRENDS IN PLUTO'S ATMOSPHERE FROM STELLAR OCCULTATIONS
10:00-10:15	Alex Dias de Oliveira, PLUTO'S ATMOSPHERE FROM 18 JULY 2012 STELLAR OCCULTATION
10:15-10:30	COFFEE BREAK
	ATMOSPHERES Continued (M Hill & H Elliott, chairs)
10:30-10:45	Cathy Olkin, THE MAY 4, 2013 STELLAR OCCULTATION BY PLUTO AND IMPLICATIONS FOR PLUTO'S ATMOSPHERE IN 2015
10:45-11:00	Erika Barth, IS METHANE SUPERSATURATION CONSISTENT WITH THE PRESENCE OF HAZE PARTICLES IN PLUTO'S ATMOSPHERE?
11:00-11:15	Jason Cook, ANALYSIS OF HIGH RESOLUTION SPECTRA OF PLUTO: A SEARCH FOR COLD GASEOUS CH ₄ LAYER AND SPATIAL VARIATION IN CH ₄ COLUMN ABUNDANCE
11:15-11:30	Eliot Young, EVIDENCE FOR RECENT CHANGE IN PLUTO'S HAZE ABUNDANCE
11:30-11:45	Mark Gurwell, ATMOSPHERIC CO ON PLUTO: LIMITS FROM MILLIMETER-WAVE SPECTROSCOPY
11:45-12:00	Alan Stern, COMETARY IMPACTS PRODUCE TRANSIENT ATMOSPHERES ON CHARON
12:00-1:30	LUNCH
	ORIGINS & SATELLITES (W McKinnon & M Showalter, chairs)
1:30-2:00	INVITED: Hal Levison, UNRAVELING THE EARLY DYNAMICAL EVOLUTION OF THE OUTER SOLAR SYSTEM
2:00-2:30	INVITED: A. Johansen, ACCRETION OF KUIPER BELT OBJECTS
2:30-3:00	INVITED: H. A. Weaver, PLUTO'S SMALL SATELLITES
3:00-3:30	INVITED: Robin Canup, ORIGIN OF PLUTO'S SATELLITES
3:30-3:45	COFFEE BREAK
	SATELLITES (J Parker & W McKinnon, chairs)
3:45-4:00	Scott Kenyon, FORMATION OF PLUTO'S LOW MASS SATELLITES
4:00-4:30	INVITED: Peter Thomas and Keith Noll, PLUTO'S SMALL SATELLITES: WHAT TO EXPECT, WHAT THEY MIGHT TELL US
4:30-4:40	Mark Showalter, ORBITS AND PHYSICAL PROPERTIES OF PLUTO'S SMALL MOONS "P4" AND "P5"
4:40-4:50	Mark Showalter, CHAOTIC ROTATION OF NIX AND HYDRA
4:50-5:05	Marina Brozovic, THE ORBITS AND MASSES OF PLUTO'S SATELLITES
5:05-5:20	Andrew Youdin, USING ORBITAL STABILITY TO CONSTRAIN THE MASSES OF PLUTO'S MINOR MOONS
5:20-5:35	Alan Stern, CONSTRAINTS ON SATELLITES OF PLUTO INTERIOR TO CHARON'S ORBIT AND PROSPECTS FOR DETECTION BY NEW HORIZONS
5:35-6:35	POSTER SESSION (C Olkin & R Binzel, chairs)
6:35-7:30	BREAK
7:30-8:30	Public Lecture by Alan Stern, "New Horizons to Planet Pluto: Exploring the Frontier of Our Solar System"

PLUTO SCIENCE CONFERENCE, July 22-26, 2013

Time/Date	DAY 3 Wednesday , July 24, 2013
7:45-8:00	COFFEE
	SATELLITES: DUST & RINGS (M Horanyi & F DeMeo, chairs)
8:00-8:15	Simon Porter, EJECTA TRANSFER WITHIN THE PLUTO SYSTEM
8:15-8:30	David Kaufmann, DYNAMICAL SIMULATIONS OF THE DEBRIS DUST ENVIRONMENT OF THE PLUTO SYSTEM
8:30-8:45	Silvia Giuliatti Winter, THE DYNAMICS OF DUST PARTICLES IN THE PLUTO-CHARON SYSTEM
8:45-9:00	Othon Winter, ON THE RELEVANCE OF THE SAILBOAT ISLAND FOR THE NEW HORIZONS MISSION
9:00-9:15	A. R. Poppe, INTERPLANETARY DUST INFLUX TO THE PLUTO SYSTEM: IMPLICATIONS FOR DUSTY EXOSPHERE AND RING PRODUCTION
9:15-9:30	N. I. Perov, DOES PLUTO'S RING EXIST?
9:30-9:45	Henry Throop, LIMITS ON PLUTO'S RING SYSTEM FROM THE JUNE 12 2006 STELLAR OCCULTATION
9:45-10:00	COFFEE BREAK
	SURFACES: COMPOSITION (D Reuter & B Hesman, chairs)
10:00-10:30	INVITED: Dale Cruikshank, COMPOSITIONS OF THE SURFACES OF PLUTO AND ITS SATELLITES
10:30-10:45	Will Grundy, DISTRIBUTION AND EVOLUTION OF PLUTO'S VOLATILE ICES FROM 0.8-2.4 μm SPECTRAL MONITORING
10:45-11:00	Noemi Pinilla-Alonso, IRAC/SPITZER PHOTOMETRY OF THE PLUTO-CHARON SYSTEM
11:00-11:15	Jason Cook, OBSERVATIONS OF PLUTO'S SURFACE AND ATMOSPHERE AT LOW RESOLUTION
11:15-11:30	Emmanuel Lellouch, PLUTO'S THERMAL LIGHTCURVES AS SEEN BY HERSCHEL
11:30-11:45	Bryan Butler, OBSERVATIONS OF PLUTO, CHARON AND OTHER TNOS AT LONG WAVELENGTHS
11:45-12:00	Eric Schindhelm, FUV STUDIES OF PLUTO AND ITS SATELLITES: FROM IUE TO NEW HORIZONS
12:00-1:30	LUNCH
12:30-1:30	Paul Schenk, Triton Half-time Show
	CHARON & LABORATORY STUDIES (D Cruikshank & A Cheng, chairs)
1:30-2:00	INVITED: Marc Buie, THE SURFACE OF CHARON
2:00-2:15	Francesca DeMeo, NEAR-INFRARED SPECTROSCOPIC MEASUREMENTS OF CHARON WITH THE VLT
2:15-2:30	Gal Sarid, MASKING SURFACE WATER ICE FEATURES ON SMALL DISTANT BODIES
2:30-2:45	Reggie Hudson, THREE NEW STUDIES OF THE SPECTRA AND CHEMISTRY OF PLUTO ICES
2:45-3:00	Brant Jones, FORMATION OF HIGH MASS HYDROCARBONS ON KUIPER BELT OBJECTS
3:00-3:15	Christopher K. Materese, RADIATION CHEMISTRY ON PLUTO: A LABORATORY APPROACH
3:15-3:30	COFFEE BREAK
	INTERIORS (A Cheng & D Cruikshank, chairs)
3:30-4:00	INVITED: Christophe Sotin, PROCESSES INVOLVED IN THE EVOLUTION OF PLUTO'S INTERIOR STRUCTURE
4:00-4:30	INVITED: Francis Nimmo, INTERIORS OF PLUTO AND CHARON
4:30-4:45	Martin Pätzold, MASS DETERMINATION OF PLUTO AND CHARON FROM NEW HORIZON REX RADIO SCIENCE OBSERVATIONS
4:45-5:00	James Roberts, CONSTRAINTS ON THE INTERIOR STRUCTURES OF PLUTO AND CHARON BASED ON TIDAL PARAMETERS
5:00-5:15	Steve Desch, DISTINGUISHING PLUTO-CHARON FORMATION SCENARIOS USING THE PARTIAL DIFFERENTIATION OF THEIR IMPACTORS
5:15-5:30	Steven M. Battaglia, CYCLING OF VOLATILES IN TRITON'S ICY LITHOSPHERE WITH IMPLICATIONS FOR CANTALOUPE TERRAIN ON PLUTO'S SURFACE
5:30-5:45	Evgeny Slyuta, PHYSICO-MECHANICAL PROPERTIES AND GRAVITATIONAL DEFORMATION OF KUIPER BELT OBJECTS

PLUTO SCIENCE CONFERENCE, July 22-26, 2013

<i>Time/Date</i>	<i>DAY 4 Thursday July 25, 2013</i>
8:00-8:15 AM	COFFEE
	SURFACES: GEOLOGY (J Moore & B Buratti, chairs)
8:15-8:45	INVITED: Paul Schenk, THE IMPROBABLE ART OF PREDICTING PLUTO-CHARON GEOLOGY
8:45-9:00	Geoffrey Collins, PREDICTIONS ABOUT TECTONICS ON PLUTO AND CHARON
9:00-9:15	Beau Bierhaus, CRATER AND EJECTA POPULATIONS ON PLUTO AND ITS ENTOURAGE
9:15-9:30	Veronica J. Bray, IMPACT CRATER MORPHOLOGY ON PLUTO
9:30-9:45	Olivier Barnouin, SURFACES PROCESSES ON THE MOONS OF PLUTO: INVESTIGATING THE EFFECTS OF GRAVITY
9:45-10:00	Marc Neveu, EXOTIC SODAS: CAN GAS EXSOLUTION DRIVE EXPLOSIVE CRYOVOLCANISM ON PLUTO AND CHARON?
10:00-10:15	Lynnae Quick, PREDICTIONS FOR CRYOVOLCANIC FLOWS ON THE SURFACE OF PLUTO
10:15-10:30	COFFEE BREAK
10:30-11:00	INVITED: Alan Howard, LANDFORMS AND SURFACE PROCESSES ON PLUTO AND CHARON
11:00-11:15	Timothy Titus, MARS SEASONAL CAPS AS AN ANALOG FOR PLUTO: JETS, FANS, AND COLD TRAPPING
11:15-11:30	Amanda Zangari, PLUTOGRAPHY: A META-ANALYSIS OF COORDINATES ON PLUTO FROM CHARON'S DISCOVERY TO THE PRESENT DAY
11:30-11:45	David A. Williams, USING GEOLOGIC MAPPING TO INVESTIGATE THE GEOLOGIC HISTORY OF PLUTO AND ITS SATELLITES
11:45-12:00	John Spencer, WHAT WILL PLUTO LOOK LIKE?
12:00-1:30	LUNCH
	SURFACE-ATMOSPHERE INTERACTIONS (J Spencer & M Buie, chairs)
1:30-2:00	INVITED: John Stansberry, INTERACTIONS BETWEEN PLUTO'S SURFACE AND ATMOSPHERE
2:00-2:15	Bonnie Buratti, PLUTO'S LIGHT CURVE OVER TIME AS AN INDICATION OF SEASONAL VOLATILE TRANSPORT
2:15-2:30	Erin George, PLUTO LIGHTCURVE IN 2010
2:30-2:45	Marc Buie, SEASONAL VARIATIONS ON THE SURFACE OF PLUTO
2:45-3:00	Leslie Young, MODELING PLUTO'S DIURNAL AND SEASONAL 3-DIMENSIONAL VOLATILE TRANSPORT WITH VT3D
3:00-3:15	Candy Hansen, PLUTO'S CLIMATE MODELED WITH NEW OBSERVATIONAL CONSTRAINTS
3:15-3:30	COFFEE BREAK
3:30-3:45	Laurence Trafton, DRIVING SEASONAL SUBLIMATION AND DEPOSITION ON PLUTO-UNCERTAINTIES IN EVALUATING THE VAPOR PRESSURE
3:45-4:00	Tim Michaels, GLOBAL SURFACE-ATMOSPHERE INTERACTIONS ON PLUTO
4:00-4:15	Kevin Baines, CHEMISTRY IN PLUTO'S ATMOSPHERE AND SURFACE: PREDICTIONS OF TRACE AEROSOL AND SURFACE COMPOSITION, AND A POTENTIAL GEOLOGIC CHRONOMETER
4:15-4:30	Vladimir Krasnopolsky, PLUTO'S PHOTOCHEMISTRY: COMPARISON WITH TITAN AND TRITON
4:30-5:00	Francois Forget , 3D MODELLING OF THE METHANE CYCLE ON PLUTO
5:00-6:00	POSTER SESSION (D McComas & R Binzel, chairs)

PLUTO SCIENCE CONFERENCE, July 22-26, 2013

<i>Time/Date</i>	<i>DAY 5 Friday July 26, 2013</i>
8:00-8:15	COFFEE
	ATMOSPHERE & MAGNETOSPHERE (R McNutt & R Gladstone, chairs)
8:15-8:30	Fran Bagenal, THE SOLAR WIND INTERACTION WITH PLUTO'S ESCAPING ATMOSPHERE
8:30-9:00	INVITED: Peter Delamere, THE ATMOSPHERE-PLASMA INTERACTION: HYBRID SIMULATIONS
9:00-9:15	Heather Elliot, ANALYSIS TECHNIQUES AND TOOLS FOR THE NEW HORIZONS SOLAR WIND AROUND PLUTO MEASUREMENTS
9:15-9:30	John Cooper, HELIOSPHERIC IRRADIATION IN THE DOMAINS OF PLUTO SYSTEM AND KUIPER BELT
9:30-9:45	Thomas Cravens, THE PLASMA ENVIRONMENT OF PLUTO AND X-RAY EMISSION: PREDICTIONS FOR NEW HORIZONS
9:45-10:00	Carey Lisse, CHANDRA OBSERVATIONS OF PLUTO'S ESCAPING ATMOSPHERE IN SUPPORT OF THE NEW HORIZONS MISSION
10:00-10:15	COFFEE BREAK
10:15-10:30	Angela Zalucha, PREDICTIONS OF RADIO OCCULTATION TEMPERATURE PROFILES FROM A PLUTO GENERAL CIRCULATION MODEL
10:30-10:45	Mélanie Vangvichith, A COMPLETE 3D GLOBAL CLIMATE MODEL (GCM) OF THE ATMOSPHERE OF PLUTO
10:45-11:00	Anthony Toigo, THE ATMOSPHERE AND NITROGEN CYCLE ON PLUTO AS SIMULATED BY THE PLUTOWRF GENERAL CIRCULATION MODEL
11:00-11:15	Kandi Jessup, ¹⁴ N/ ¹⁵ N DETECTABILITY IN PLUTO'S ATMOSPHERE
11:15-11:30	Randy Gladstone, LY α @PLUTO
11:30-11:45	Michael Stevens, PLUTO'S ULTRAVIOLET AIRGLOW
11:45-12:00	CLOSING REMARKS: Alan Stern

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POSTER PRESENTATIONS

	First Author	Title	Topic
1	Carly Howett	CALIBRATION OF THE RALPH/MVIC CAMERA	New Horizons
2	Cathy Olkin	A DETAILED LOOK AT SELECTED RALPH OBSERVATIONS NEAR CLOSEST APPROACH	New Horizons
3	R. Binzel	NEW HORIZONS EARTH-BASED CAMPAIGN: CALIBRATION AND CONTEXT OF THE PLUTO SYSTEM	New Horizons
4	N. I. Perov	ON (ANY) PLUTO'S COMETARY FAMILY	Kuiper Belt Context
5	Julio Camargo	STELLAR OCCULTATIONS AND THE HELIOCENTRIC DISTANCE OF PLUTO, ASTROMETRIC ANALYSIS OF 15 YEARS OF PLUTO OBSERVATION	Kuiper Belt Context
6	Ryo Suetsugu	TEMPORARY CAPTURE OF PLANETESIMALS IN THE KUIPER BELT	Kuiper Belt Context
7	J. P. Emery	NEAR-INFRARED (3.6 AND 4.5 μm) SPECTROPHOTOMETRY OF LARGE KBOS (WITHDRAWN)	Kuiper Belt Context
8	Michael J. Person	PRESERVING PLUTO'S ATMOSPHERIC EVOLUTION RECORD BY ARCHIVING STELLAR OCCULTATION DATA SETS IN THE PLANETARY DATA SYSTEM (PDS)	Atmospheres
9	T. J. Fleming	ONE-DIMENSIONAL DSMC MODEL OF PLUTONIAN ATMOSPHERE	Atmospheres
10	A. Gulbis	OBSERVATIONS OF A SUCCESSIVE STELLAR OCCULTATION BY CHARON AND GRAZE BY PLUTO IN 2011	Atmospheres
11	O. Mousis	ON THE POSSIBLE NOBLE GAS DEFICIENCY OF PLUTO'S ATMOSPHERE	Atmospheres
12	P. M. Pires dos Santos	ANALYSIS ON THE DYNAMICS OF THE PLUTO SYSTEM DURING NEPTUNE SCATTERING AS PREDICTED BY THE NICE MODEL	Origins & Satellites
13	Felipe Braga-Ribas	SELECTED STELLAR OCCULTATION BY PLUTO SYSTEM UP TO 2015	Satellites
14	Simon Porter	SIMULTANEOUS N-BODY FITS OF THE PLUTO SYSTEM	Satellites
15	A. J. Gonring	EXPLORING THE DYNAMICAL CONSEQUENCES OF THE COLLISIONAL ENVIRONMENT OF THE KUIPER BELT ON THE ORBITS OF PLUTO'S SMALL SATELLITES	Satellites
16	N. S. Knerr	SIMULATION OF THE EFFECT OF CHARON ON ESCAPING MOLECULES IN THE PLUTO-CHARON SYSTEM	Atmosphere & Magnetosphere
17	J.R. Szalay	THE STUDENT DUST COUNTER: STATUS REPORT AT 26 AU	Satellites: Dust & Rings
18	Anne Verbiscer	NEAR-INFRARED SPECTRA OF PLUTO	Surfaces: Composition
19	Jay Goguen	A SEARCH FOR PREDICTED PHOTOCHEMICAL PRODUCTS ON PLUTO AND TRITON	Surfaces: Composition
20	S. Protopapa	ABSORPTION COEFFICIENTS OF METHANE ICE DILUTED IN NITROGEN AT DIFFERENT MIXING RATIOS: IMPLICATIONS FOR PLUTO	Surfaces: Composition
21	B. Schmitt	NEAR-INFRARED SPECTRA OF SIMPLE ORGANIC MOLECULES CANDIDATES FOR THE COMPOSITION OF PLUTO'S SURFACE	Charon & Laboratory Studies
22	G. G. Galuba	SEGREGATION ON PLUTO'S MOONS? PAYING CHARON (AND NIX AND HYDRA) CLOSER ATTENTION	Charon & Laboratory Studies
23	William McKinnon	THE SHAPES OF THINGS TO COME: ROTATIONAL AND TIDAL FIGURES OF EQUILIBRIUM FOR PLUTO AND CHARON	Interiors
24	Ross Beyer	THE NINTH PLANET'S THIRD DIMENSION	Surfaces: Geology
25	Olivier Barnouin	ANALYZING THE PLUTO-CHARON SYSTEM USING THE SMALL BODY MAPPING TOOL	Surfaces: Geology
26	E. S. Martin	EVALUATING THE GLOBAL TECTONIC HISTORIES OF ICY BODIES: ENCELADUS AS A CASE EXAMPLE	Surfaces: Geology
27	C. M. Ernst	CRATERING IN THE PLUTO-CHARON SYSTEM: INSIGHTS FROM LOW-VELOCITY EXPERIMENTS	Surfaces: Geology
28	Y. L. Yung	PLUTO'S IMPLICATIONS FOR A SNOWBALL TITAN	Surface-Atmosphere Interactions
29	M.A. Bullock	THE DISTRIBUTION OF HYDROCARBONS ON PLUTO'S SURFACE: DEPENDENCE ON SEASONAL BEHAVIOR OF THE ATMOSPHERE	Surface-Atmosphere Interactions
30	O. J. Tucker	ATMOSPHERIC ESCAPE FROM THE PLUTO/CHARON BINARY SYSTEM: KINETIC MONTE CARLO SIMULATION	Atmosphere & Magnetosphere
31	Karl Wahlberg Jansson	THE EFFECTS OF DISSIPATIVE BOUNCING COLLISIONS IN A PARTICLE CLOUD IN VIRIAL EQUILIBRIUM	Origins & Satellites