Monday Morning / 9 February 2004									
0900	0920	0940	1000	1020	1040	1100	1120	1140	
Plenary Talk (0830	– 0900)	Balan	cing Research and	Operations at the Ai	r Force Maui Site			Maile	
		Speaker:	Joseph Janni, Air Fo	orce Maui Optical an	d Supercomputing	Site			
Session 1: Specia	I Session: Solar Sai	ls l						Pikake	
Chaired by Mike Li	sano, Jet Propulsion	Laboratory							
Sailcraft Coordinate Systems and Format for Reporting Propulsive Performance	Cosmos 1: The World's First Solar Sail Spacecraft <i>V. Gotlib et al.</i>	The Geostorm Warning Mission: Enhanced Opportunities Based on New Technology J. West	NASA's Integrated Development of Solar Sail Propulsion <i>G. Garbe et al.</i>	Break	Progress and Plans for System Demonstration of a Scalable Square Solar Sail System D. Murphy et al.	Solar Sail Geostorm Warning Mission Design C. Yen			
B. Derbes et al.									
Session 2: Orbita	Mechanics I							Plumeria	
Chaired by Bob Glo	ver, AT&T Governme	ent Solutions, Inc.							
A-B-Cs of Sun- Synchronous Orbit Mission Design R. Boain	The Use of X-ray Pulsars for Spacecraft Navigation S. Sheikh et al.	Optimal Continuous Coverage of the Northern Hemisphere with Elliptical Satellite Constellations F. Dufour	Precise Specialised Orbit Insertion and Maintenance for Small Earth- Observation Satellites <i>M. Aorpimai et al.</i>	Break	Recent Developments in the Models Used for Orbiter Lifetime Analysis <i>M. Vincent</i>	Optimal Constellation Design for Orbital Munitions Delivery System J. Anderson et al.	CALIPSO's Mission Design: Sun Glint Avoidance Strategies <i>L. Mailhe et al.</i>		
Session 3: Specia	I Session: ACS Sen	sor Alignment and	Calibration					Haku	
Chaired by Mark Pi	ttelkau, Applied Phys	sics Laboratory							
Unscented Kalman Filtering for Spacecraft Attitude State and Parameter Estimation <i>M. VanDyke et al.</i>	Attitude Determination and Calibration with Redundant Gyros <i>M. Pittelkau</i>	Generic Procedure for Modeling Skewed Multiple-Axis Gyros P. Lai	ICESAT GLAS Precision Attitude Determination for Early Laser Operation S. Bae et al.	Break	Autonomous Focal Plane Calibration Using Intelligent Radial Basis Function Networks <i>P. Singla et al.</i>	Attitude and Interlock Angle Estimation for GIFTS Mission <i>P. Singla et al.</i>	Star Tracker Calibration and Attitude Control System Validation for Demeter Satellite J. Mignot et al.	System Identification of a Spherical Air- Bearing Spacecraft Simulator J. Schwartz et al.	
Session 4: Specia	I Session: Space S	urveillance Process	ing					Maile	
Chaired by Mike Str	ringer, Air Force Spa	ce Commmand							
NORAD/USST RATCOM Systems Certification Process H. Morgenstern	AFSPC Astrodynamic Standard Software D. Kaya et al.	DOD Laser Clearing House - Policy and Implementation R. Morris et al.	Discussions	Break	Space Surveillance Network Automated Tasker B. Wilson	Tools and Databases used to Maintain the Space Catalog at 1 CACS <i>M. Stringer et al.</i>	How Space Surveillance Contributed to the STS 107 Accident Investigation <i>T. Kelso et al.</i>	Discussions	

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1330	1350	1410	1430	1450	1510	1530	1550	1610	1630	
Session 5: Inter	rplanetary Mission	ns I							Haku	
Chaired by Jean	de Lafontaine, Ur	niversité de Sherb	rooke							
Angle-of-attack- modulated Terminal Point Control for Neptune Aerocapture <i>E. Queen</i>	Design of Lunar Gravity-Assist for the BepiColombo Mission to Mercury S. Campagnola et al.	Nozomi Earth Swingby Orbit Determination <i>M. Ryne et al.</i>	End-to-End Mission Analysis for a Low-Cost, Two-Spacecraft Mission to Europa <i>M. Khan et al.</i>	Evaluation of an Energy-Cuto Algorithm for the Saturn Orbit Insertion Burn of the Cassini- Huygens Mission <i>T. Goodson</i>	Break	1-AU Calibration Activities for Stardust Earth Return <i>B. Kennedy et al.</i>	Geometric Analysis of Visibility of Mission Support Infrastructure for Phobos and Deimos Utilization W. Chadwick III et al.	New Horizons Pluto Approach Navigation J. Miller et al.	Options for Optimal Trajectory Design of a Mission to NEOS Using Low- Thrust Propulsion <i>M. Massari et al.</i>	
Session 6: Attit	ude Dynamics & (Control I							Pikake	
Chaired by Don Time-Varying Potential Function Control for Constrained Attitude Tracking <i>M. Casasco et al.</i>	Mackison, Universi Trimmability and Maneuverability Analysis of the Unmanned Space Vehicle A. Guidi et al.	ty of Colorado Attitude and Position Estimation from Vector Observations D. Mortari et al.	Spacecraft Attitude Estimation from Vector Observations Using a Fast Particle Filter Y. Oshman et al.	Attitude Determination and Control of a Nanosatellite Using Only the Geomagnetic Field <i>P. Hur et al.</i>	Break	Spatial Structure of Attitude Uncertainty S. Tanygin et al.	Flexible Space System States and Parameters Estimation A. Trigolo et al.	Equal Chord Attitude Determination Method for Spinning Spacecraft J. Van Der Ha		
Session 7: Optimization and Control I										
Chaired by Dan	Scheeres, Universi	ty of Michigan								
Construction of Idealized Free- Return Earth-Mars Cyclers using Minimax Optimization and Combinatorics <i>R. Russell et al.</i>	A Quadrature Discretization Method for Solving Optimal Control Problems P. Williams	An Embedded Function Tool for Modeling and Simulating Estimation Problems in Aerospace Engineering T. Griffith et al.	A Study on the Guidance Correcting Law for the Aerodynamic Ascent Flight T. Yamamoto et al.	Optimization of Stationkeeping for a Libration Point Mission S. Infeld et al.	Break	Adaptive Pulse- Width-Modulation F. Curti et al.	Design of an Optimal Combination of Feedback Control and Iterative Learning Control K. Takanishi et al.	Dynamic Output Feedback Predictive Controllers for Vibration Suppression and Periodic Disturbance Rejection <i>R. Darling et al.</i>	Dynamic Response of a System Driven by Thermal Actuation <i>M. Parisse et al.</i>	
Session 8: Forn	nation Flying I								Maile	
Chaired by Rao V Aspherical Formations N e a r the Libration Points of the Sun- Earth/Moon Ephemeris System B. Marchand et al.	Vadali, Texas A&M Dynamics of Satellite Formations on Eccentric Orbits Edwin Wnuk et al.	University Characterization of the Relative Motion of Rendezvous Between Vehicles in Proximate, Highly Elliptic Orbits C. Olsen et al.	Centralized and Distributed Formation Flying at Sun-Earth L2 Libration Point <i>G. Radice et al.</i> Late Withdrawal	Control of Libration Point Satellite Formations S. Vadali et al.	Break	The Development of High Fidelity Linearized J2 Models for Satellite Formation Flying Control J. Roberts et al.	Development of a State Transition Matrix for Relative Motion using the Unit Sphere Approach H. Yan et al.	Criteria for Best Configuration and Sub-Optimal Reconfiguration for MMS Mission D. Gim et al.		
Award Presentat	ions and (1700 - 1830)		Snoako	r: David Dunham	JUMErent	sics Laboratory			walle	
DIOUWEI LECIUIE			Speake	i. Daviu Duliliaili, s	sito Applieu Fliys	nus Laburatury				

Tuesday Morning / 10 February 2004										
0830	0850	0910	0930	0950	1010	1030	1050	1110	1130	1150
Session 9: Te Chaired by Pet	ther Satellite Sy er Bainum, Howa	s tems ard University								Haku
Probability of Detecting a Tethered Satellite System N. Choe et al.	Identification of a Tethered Satellite Using a Kalman Filter D. Cicci et al.	Command Generation for Tether Retrieval M. Robertson et al.	Relative Equilibrium of Electro-dynamic Tethers in Equatorial Orbits K. Mankala et al.	A Low-Cost Mission for Testing In-Orbit a Passive Electro-Dynamic Tether De- Orbiting System P. Tortora et al.	Break	Guidance and Control of Tethered Satellite Systems using Pseudospectral Methods <i>P. Williams</i>	Dynamical Effects of Solar Radiation Pressure on a Spinning Tether System for Interferometry C. Bombardelli et al.	Space Tethers as Testbeds for Spacecraft Formation-flying <i>M. Cosmo et al.</i>	Effect of Damping on Planar Spin-Up Dynamics of Artificial- Gravity- Generating Tethered Satellite System A. Mazzoleni et al.	
Session 10: C Chaired by Brue	ollision Avoidar ce R. Bowman, A	n ce, Debris and A Nir Force Space C	Atmospheric Dra command	ag						Plumeria
A Method for Computing Accurate Daily Atmospheric Density Values from Satellite Drag Data B. Bowman et al.	The Semiannual Thermospheric Density Variation From 1970 to 2002 Between 200- 1100 km B. Bowman	Simultaneous Real-Time Estimation of Atmospheric Density and Ballistic Coefficient J. Wright et al.	Removal of Arbitrary Discontinuities in Atmospheric Density Modeling J. Wright et al.	A Comparison Atmospheric Neutral Density Derived form Ultraviolet Airglow Observations and the CHAMP Accelerometer Nicholas et al. Late Withdrawal	Break	Drag Coefficient Variability from 200-500 km from the Analysis of 4 Spheres K. Moe	Disposing of Objects in Geosynchronous Transfer Orbit by Atmospheric Reentry J. Coil et al.	Collision of Spacecraft of Various Shape with Debris Particles Assessment A. Nazarenko	Effects of Cross Correlated Covariance on Spacecraft Collision Probability V. Coppola et al.	Results and Issues of Atmospheric Density Correction V. Yurasov et al.
Chaired by Ric	hard Longman. (S & Control II Columbia Univers	sitv							FINANE
Application of the Cayley Form to General Spacecraft Motion A. Sinclair et al.	Effects of Internal Mass Flow on the Attitude Dynamics of Variable Mass Systems T. Tran et al.	Globally Stabilizing Saturated Attitude Control in the Presence of Bounded Unknown Disturbances <i>R. Wallsgrove et</i> <i>al.</i>	Influence of Propellant Burn Pattern on the Attitude Dynamics of a Spinning Rocket J. Sookgaew et al.	Modeling Closely-Coupled Satellite Systems as Quasi-Rigid Bodies J. Cochran et al.	Break	Optimal Results for Autonomous Attitude Control Using the Potential Function Method <i>M. Casasco et al.</i>	Using Root Locus Departure Angle Compensators to Raise the Cutoff Frequency in Repetitive Control C. Lo et al.	How to Avoid Singularity For Euler Angle Set? P. Singla et al.		
Session 12: Special Session: Optical Satellite Tracking Systems Maile										Maile
Accuracy Assessment of MSSS Metric Data B. Shishido et al.	The Dynamic Properties of Rotation and Optical Characteristics of Space Debris at Geostationary Orbit Y. Karavaev et al.	Wide Field of View Telescope Development at AMOS B. Law et al.	Daylight Astrometry and Design Studies for the LEO Raven J. Nelson et al.	Relative Orbit Determination of Geosynchronous Satellites Using The Cowpoke Equations <i>C. Sabol et al.</i>	Break	Canadian Surveillance of Space Concept Demonstrator – The First First 4 Months of Testing L. Scott et al.	Comparison of Optical and Radar Tracking for Catalog Maintenance K. Alfriend et al.	High Accuracy Orbit Updates Using Angles- Only Data C. Sabol et al.		

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1330	1350	1410	1430	1450	1510	1530	1550	1610	1630
Session 13: Opt	timization and Cor	ntrol II							Maile
Chaired by Alan	Lovell, Air Force F	Research Laborato	ory						
Stabilization of Learning Control in the Presence of Parasitic Poles for Short Time Trajectories K. Chen et al.	Stability and Performance Analysis of Matched Basis Function Repetitive Control in Frequency Domain <i>M. Nagashima et al.</i>	Real-Time Optimization for Optimal Feedback Control of Robot Arms J. Zhao et al.	Passivity-Based Stable Pi-Like Control Structures for a Class of Nonlinear Systems K. Subbarao et al.	The Evolution of Optimal Trajectories by Implicit Simulation J. Riehl et al. Late Withdrawal	Break	POST Trajectory Convergence Acceleration Using Multiple Shooting B. Raiszadeh et al. Late Withdrawal	Passive Thermal Control of a Spacecraft: A Criterion for the Optmization of Thermo-Optical Parameters <i>M. Parisse et al.</i> Late Withdrawal	Primer Vector Theory for Optimal Relative Waypoint Flying A. Trask et al.	
Session 14: Orl	bital Mechanics II								Plumeria
Chaired by Chris	Hall, Virginia Poly	technic Institute ar	nd State University						
Constellation Design Using Flower Constellations <i>M. Wilkins et al.</i>	Drag Sail Dynamics for EOL Deorbit P. Roberts	Effects of Orbit Perturbations on a Class of Earth Orbiting Interferometric Observatories I. Hussein et al.	Large Payloads to LEO Using Endo- Atmospheric Energy Exchange P. Carter II et al.	Mission Analysis for the Deorbitation of Spot-1 C. Salcedo	Break	Relative Motion Dynamics About a Periodic Orbit <i>W. Wiesel</i>	6-DOF Aerobraking Trajectory Reconstruction by Use of Inertial Measurement Unit (IMU) Data for the Improvement of Aerobraking Navigation <i>M. Jah et al.</i>	Partially Passive Inclination Control of Geosynchronous Satellites <i>M. Johnson et al.</i>	Desensitized Optimal Orbit Insertion H. Seywald
Session 15: Ort	bit Determination		•						Haku
Chaired by Felix	Hoots AT&T Gove	ernment Solutions,	Inc.						
Geosynchrono us Orbit Determination Using the High Accuracy Network Determination System (HANDS) <i>C. Sabol et al.</i>	GPS Based Orbit Determination System for the KOMPSAT-2 B. Lee et al.	Improvement of Estimated Orbit by Using Single Differenced Gps Observation Data J. Jo et al.	Modeling the Performance of the Naval Space Surveillance Fence G. Pierce et al.	Orbit Determination Covariance Analysis for Planetary and Interplanetary Missions S. Delavault	Break	Orbit Determination of Stardust from the Annefrank Asteroid Fly-by through the Wild 2 Comet Encounter E. Carranza et al.	Orbit Determination Strategy Using Single Frequency GPS Data Y. Hwang et al.	Orbital Covariance Interpolation S. Alfano	Special Perturbations to General Perturbations Extrapolation Differential Corrections in Satellite Catalog Maintenance D. Cappellucci et al Late Withdrawal.
Session16: Inte	rplanetary Missio	o ns II Inulsion Laboratory	1						Pikake
SIRTF Takes Flight M. Garcia, JPL	Earth Return Maneuver Strategies for Genesis and Stardust K. Williams	Trajectory Design for the Genesis Backup Orbit R. Wilson et al.	WMAP Shadow Avoidance Maneuver Analysis D. Fink et al.	Trajectory Options for a Mars Sample Return Mission L. Casalino et al.	Break	Trajectory Space for a Low Thrust Earth-to-Jupiter Mission K. Hack et al. Late Withdrawal	Finite Burn, Roundtrip Interplanetary Trajectories with ISP Constraints and Mass Discontinuities C. Ranieri et al.	Optimal Planetary Orbital Transfers via Chemical Engines and Electrical Engines A. Miele et al.	Phobos Imaging and Mapping Preliminary Mission Design S. Casotto et al.

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0830	0850	0910	0930	0950	1010	1030	1050	1110	1130	
Session 17: Orb	oit Determination I	l							Haku	
Chaired by Bobby	G. Williams, Kiner	tX Inc.								
A Two-Timescale Discretization Scheme for Collocation P. Desai et al.	Range Bias Modeling for Satellite Catalog Maintenance A. Segerman et al.	Autonomous Target Tracking of Small Bodies During Flybys S. Bhaskaran et al.	A Variable Step Double Integration Multi-Step Integrator <i>M. Berry et al.</i>	Establishment and Validation of the NRL 1-Meter Telescope Position A. Hope et al.	Break	Examination of NORAD TLE Accuracy using the Iridium Constellation W. Boyce III	Geosynchronous Orbit Determination Using Space Surveillance Network Observations and Improved Radiative Force Modeling – Results of Real Data Processing <i>R. Lyon et al.</i>	Automatic Generation and Integration of Equations of Motion by Operator Over- Loading Techniques T. Griffith et al.		
Session 18: Ort Chaired by Paul	bital Mechanics III Penzo, Global Aei	rospace Corporatio	on						Plumeria	
A Simple Algorithm to Compute Hyperbolic Invariant Manifolds Near L1 And L2 B. Villac et al.	Orbit Mechanics about Planetary Satellites <i>M. Paskowitz et al.</i>	An Approach to the Design of Low Energy Interplanetary Transfers Exploiting Invariant Manifolds of the Restricted Three- Body Problem F. Topputo et al.	Keeping a Spacecraft on the Sun-Earth Line C. Roithmayr et al.	Minimum-Fuel Periodic Orbits in the Vicinity of a Fixed Point on the Sun-Earth Line: The Planar Case H. Shen et al.	Break	LEO Constellation Design Using the Lunar L1 Point J. Chase et al.	Analytical Gradients for Trajectories with Long Duration Burns, Coast Segments, and Flybys S. Zimmer	A Tool for the Preliminary Design of Low- Thrust Gravity Assist Trajectories P. De Pascale et al.	Modeling of Proof Mass Self-Gravity Field for the Laser Interferometry Space Antenna (LISA) <i>M. Quadrelli</i>	
Session 19: For Chaired by Ron	mation Flying II Proulx. Charles St	ark Draper Labora	torv						Maile	
Comparison of a Nominal Versus Relaxed Guidance Algorithm for Formation Reconfiguration of LEO Spacecraft A. Lovell et al.	A Lyapunov- Based Controller for Satellite Formation Reconfiguration in the Presence of J2 Perturbations <i>P. Sengupta et al.</i>	Cluster Planning and Control for Spacecraft Formations <i>M. Campbell et al.</i>	Interval Control of Formations in Eccentric Orbits O. Abdelkhalik et al.	Low Thrust Control Optimization for Satellite Formation J. Seo et al.	Break	Autonomous Orbit Navigation of Two Spacecraft System Using Relative Line of Sight Vector Measurements J. Yim et al.	Optimal Trajectory Generation and Control for Reconfiguration Maneuvers of Formation Flying using Low-thrust Propulsion <i>M. Massari et al.</i>	Relative Motion Stabilization of a Coulomb Spacecraft Cluster H. Schaub	Transient Stability of Motion Relative to a Stabilized Trajectory: Application to Formation Flight F. Hsiao et al.	
Session 20: Opt	imization and Cor	ntrol III							Pikake	
Chaired by David	Spencer, Pennsy	Ivania State Unive	rsity					1	1	
Fine-tuning of a Kalman Filter with a Genetic Algorithm and with Gradient- Based Optimization Methods O. Gueye et al.	Maneuver Optimization for Fast Satellite Circumnavigation S. Straight et al.	On the Relation between the Local Formation Control Law and the Resulted Configuration <i>T. Saiki et al.</i>	Optimal Low- Thrust Orbital Transfers Around a Rotating Non- Spherical Body <i>G. Whiffen</i>	Optimal Low- Thrust Trajectory Analysis for Constant and Variable Specific Impulse Thrusters Generated by Direct Methods and Multi- Objective Genetic Algorithms S. Rocca et al.	Break	Optimization in Sun-Synchronous Orbital Transfer J. Chern et al. Late Withdrawal	Pareto Front and Sensitivity Analysis for Trajectory Optimization A. Faulds			

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1330	1350	1410	1430	1450	1510	1530	1550	1610	1630	1650
Session 21: Interplanetary Missions III Haku Chaired by Louis D'Amario, Jet Propulsion Laboratory										
Hopping Analysis on Regolith-like Surface of Small Planetary Bodies T. Yoshimitsu	The Mars Reconnaissanc e Orbiter Mission Plan R. Lock et al.	Preliminary Results of Mars Exploration Rover In-Situ Radio Navigation J. Guinn et al.	Mars Exploration Rover Terminal Descent Mission Modeling and Simulation B. Raiszadeh et al.	Systems for Pinpoint Landing at Mars A. Wolf et al.	Break	Coordination of Mars Orbiting Assets to Support Entry, Descent, & Landing (EDL) Activities J. Neelon et al.	Autonomous Planetary Landing with Obstacle Avoidance: The Quartic Guidance Revisited J. de Lafontaine et al.	Assessment of Per-Axis Thruster Control Authority of Cassini Spacecraft for Low-Altitude Titan Flybys S. Sarani	Initial Operation Of Rocsat-2 The Second Satellite Of Roc J. Chern Late Withdrawal	Dynamics and Control of a Herd of Sondes Guided by a Blimp on Titan <i>M. Quadrelli et al.</i>
Session 22: Special Session: Solar Sails II Pik										Pikake
Chaired by Mik The L1 Diamond Affair C. Sauer, Jr	e Lisano, Jet Pro Optimal Counter-Intuitive Solar Sail Escape Trajectories J. Hartmann et al.	DUISION Laborato Earth Escape Using a Slowly- Rotating, Doubly- Reflective Solar Sail M. Swartwout	A Comparison of Solar Sail Control Methods in Geosynchronous Transfer Orbits J. Neubauer et al.	Solar Sail Attitude Control Sensitivity to Solar Radiation Pressure Model Accuracy J. Bladt et al.	Break	A Solar Sail Integrated Simulation Toolkit J. Ellis et al.	A "Yank and Yaw" Control System for Solar Sails D. Lichodziejewski et al.	Robust Thrust Control Authority for a Scalable Sailcraft D. Murphy et al.	Navigation Models of Solar Sails: Modeling a Circular Sail with Billow L. Rios-Reyes et al.	
Session 23: O	rbital Mechanics	s IV Ivania State Univ	ersity							Plumeria
Representations of Invariant Manifolds for Applications in Three-Body Systems K. Howell et al.	The Role of Invariant Manifolds in Low Thrust Trajectory Design <i>M. Lo et al.</i>	Application of Dynamical Systems Theory to a Very Low Energy Transfer S. Ross et al.	Coupled Effects of Initial Orbit Plane on Orbit Lifetime in the Three Body Problem C. Scott et al.	The Dynamics of Orbits in a Potential Field of a Solid Circular Ring <i>R. Broucke et al.</i>	Break	Orbits Around an Elongated 3D-Object Such as the Asteroid Eros <i>R. Broucke et al.</i>	Lambert's Theorem – A Complete Series Solution J. Thome	Relative Spacecraft Motion: A Hamiltonian Approach to Eccentricity Perturbations <i>E. Kolemen et al.</i>	Satellite Constellation Design for Mid- Course Ballistic Missile Intercept L. Sauter et al.	
Session 24: For Chaired by Jay	ormation Flying Middour, Naval	III Research Labor	atory							Maile
Close Spacecraft Formation Keeping P. Vignal et al.	Constellation Design with Uniformly Distributed Satellites K. Park et al.	Geometric Approach to Orbital Formation Mission Design M. Press et al.	Flower Constellations for Global Navigation Applications <i>M. Castronuovo</i> et al. Late Withdrawal	Hovercraft Satellite Simulation Test- Bed B. Essenberg et al.	Break	Low-Thrust Formation Flight for Astronomy Satellite H. Yamakawa	Mihail Satellite Constellation M. Furman	The Design and Development of the GRACE Mission Analysis Tool J. Mauldin et al.	Formation Flying and Constellation Station Keeping in Near-Circular Orbits X. Duan et al.	