2014-03-10

Projects Thesis Research

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150. Target Material Detection and Image Classification Using Near and Shortwave Infrared (NIR/SWIR) and Long Wave Infrared (LWIR) Hyperspectral Imagery (HSI)
   Cody Lanning, Remote Sensing Intelligence
   December 2013
   Thesis Advisor: Fred A. Kruse
   Thesis Co-Advisor: R.C. Olsen

149. LIDAR Point Cloud and Stereo Image Point Cloud Fusion
   Paul L. Baigall, Remote Sensing Intelligence
   September 2013
   Thesis Advisor: Fred A. Kruse
   Second Reader: R.C. Olsen

148. MODTRAN Radiance Modeling of Multi-angle Worldview-2 Imagery
   Samuel I. Marshall, Space Systems Operations
   September 2013
   Thesis Advisor: R.C. Olsen
   Second Reader: Fred A. Kruse

147. Visible–Near Infrared (VNIR) and Shortwave Infrared (SWIR) Spectral Variability of Urban Materials
   Kenneth G. Fairbarn, Jr., Remote Sensing Intelligence
   March 2013
   Thesis Advisor: Fred A. Kruse
   Second Reader: R.C. Olsen

146. Aerosol Optical Depth Effects on Hyperspectral Image Classification in an Arid Environment
   Aaron E. Smith, Remote Sensing Intelligence
   March 2013
   Thesis Advisor: Charlene Sailer
   Second Reader: R.C. Olsen

145. Detecting and Characterizing Night Lights Using Hyperspectral and Multispectral Imagery
   Jeremy P. Metcalf, Remote Sensing Intelligence
   December 2012
   Thesis Advisor: Fred A. Kruse
   Second Reader: Chris Elvidge, NOAA National Geophysical Data Center

144. Using Multi-Angle WorldView-2 Imagery to Determine Ocean Depth near Oahu, Hawaii
   Krista R. Lee, Remote Sensing Intelligence
   September 2012
   Thesis Advisor: R.C. Olsen
   Second Reader: Fred A. Kruse

143. Time Series Analysis of Vegetation Change Using Hyperspectral and Multispectral Data
   Spencer A. Wahman, Remote Sensing Intelligence
   September 2012
   Thesis Advisor: Fred A. Kruse
   Second Reader: Dar A. Roberts, University of California-Santa Barbara

142. (Classified)
   Steven D. Terry, Remote Sensing Intelligence
   September 2012

141. (Classified)
   Jason C. Suckstorff, Remote Sensing Intelligence
   September 2012

140. (Classified)
   Ralph R. Shoukry, Remote Sensing Intelligence
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<tr>
<td>137</td>
<td>Urban Classification Techniques Using the Fusion of LiDAR and Spectral Data</td>
<td>Justin E. Mesina</td>
<td>September 2012</td>
<td>R.C. Olsen</td>
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<td>136</td>
<td>Multi-Frame Object Detection</td>
<td>Christina M. Mayberry</td>
<td>September 2012</td>
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<td>135</td>
<td>Spectral Unmixing Applied to Desert Soils for the Detection of Sub-Pixel Disturbances</td>
<td>Jessica Howard</td>
<td>September 2012</td>
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<td>Visualizing IEDs: A Spatio-Temporal Analysis in the Sangin District of Helmand Province</td>
<td>Amanda L. Jones</td>
<td>September 2012</td>
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<td>133</td>
<td>Exploration of Data Fusion between Polarimetric Radar and Multispectral Image Data</td>
<td>William D. Hall</td>
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<td>Mallory E. DeCoster</td>
<td>September 2012</td>
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<td>September 2012</td>
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<td>129</td>
<td>An Exploratory Spatiotemporal Analysis of Improvised Explosive Device Incidents in Kandahar Province, Afghanistan</td>
<td>Stephanie L. Cox</td>
<td>September 2012</td>
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<td>128</td>
<td>Detection of Spatially Unresolved (Nominally Sub-Pixel) Submerged and Surface Targets Using Hyperspectral Data</td>
<td>Christopher Burt</td>
<td>September 2012</td>
<td>R.C. Olsen</td>
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125. Improving Identification of Area Targets by Integrated Analysis of Hyperspectral Data and Extracted Texture Features
Corey F. Bangs, Remote Sensing Intelligence
September 2012
Thesis Advisor: Fred A. Kruse
Second Reader: R.C. Olsen

124. Automating Identification of Roads and Trails Under Canopy Using LiDAR
Charles F. Harmon III, Space Systems Operations and Remote Sensing Intelligence
September 2011
Thesis Advisor: R.C. Olsen
Second Reader: Kristen Tsolis

123. Evaluation of LiDAR for Automating Recognition of Roads and Trails Beneath Forest Canopy
Steven L. Muha, Space Systems Operations
September 2011
Thesis Advisor: R.C. Olsen
Second Reader: Cajun James

122. Coastal Bathymetry Using Satellite Observation in Support of Intelligence Preparations of the Environment
Kenneth B. Myrick II, Space Systems Operations
September 2011
Thesis Advisor: R.C. Olsen
Second Reader: Jamie MacMahan

121. (Classified)
Joshua R. Nagtzaam, Space Systems Operations
September 2011

120. (Classified)
Cory N. Scott, Space Systems Operations
September 2011

119. Disturbance Detection in Snow Using Polarimetric Imagery of the Visible Spectrum
David C. West, Applied Physics
December 2010
Thesis Advisor: R.C. Olsen
Second Reader: David M. Trask

118. High Spatial Resolution Bidirection Reflectance Retrieval Using Satellite Data
Cecelia L. McConnon, Space Systems Operations
December 2010
Thesis Advisor: R.C. Olsen
Second Reader: J. H. Newman

117. Predicting Soil Strength with Remote Sensing Data
Jon T. Wende, Space Systems Operations
September 2010
Thesis Advisor: R.C. Olsen
Thesis Co-Advisor: C. Bachmann

116. (Classified)
N. Marciano, Space Systems Operations
September 2010

115. Coastal Bathymetry Using 8-Color Multispectral Satellite Observation of Wave Motion (with movie)
Bradley L. McCarthy, Remote Sensing Intelligence
September 2010
Thesis Advisor: R.C. Olsen
Second Reader: Fred A. Kruse

114. Utility of Satellite LiDAR Waveform Data in Shallow Water
Neal Battaglia, Applied Physics
June 2010
Thesis Advisor: R.C. Olsen
Second Reader: David M. Trask

113. NDVI and Panchromatic Image Correlation Using Texture Analysis
David A. Jablonski, Space Systems Operations
March 2010
Thesis Advisor: R.C. Olsen
Second Reader: David M. Trask
112. Simulating Full-Waveform LiDAR  
Angela M. Kim, Applied Mathematics  
September 2009  
Thesis Co-Advisor: Carlos F. Borges  
Thesis Co-Advisor: R.C. Olsen

111. (Limited Distribution)  
Christopher A. Jones, Space Systems Operations  
September 2009

110. The Use of Commercial Remote Sensing in Predicting Helicopter Brownout Conditions  
Christine Kay Rabaja, Space Systems Operations  
September 2009  
Thesis Advisor: R.C. Olsen  
Second Reader: David M. Trask

109. Point Density Effects on Digital Elevation Models Generated from LiDAR Data  
Richard L. Duldulao, Applied Physics  
June 2009  
Thesis Advisor: R.C. Olsen  
Second Reader: David M. Trask

108. Polarimetric Imaging for the Detection of Disturbed Surfaces  
Michael E. Eyler, Applied Physics  
June 2009  
Thesis Advisor: R.C. Olsen  
Second Reader: R. Harkins

Michael J. Loomis, Jr., Meteorology and Physical Oceanography  
March 2009  
Thesis Advisor: Philip A. Durkee  
Thesis Co-advisor: R.C. Olsen

106. Investigating the Effects of Higher Spatial Resolution on Benthic Classification Accuracy at Midway Atoll  
Richard K. Arledge, Space Systems Operations  
Ervin B. Hatcher, Space Systems Operations and Information Technology Management  
September 2008  
Thesis Advisor: Daria Siciliano  
Thesis Co-Advisor: R.C. Olsen  
Second Reader: Glenn Cook

105. Assessing Accuracy in Varying LiDAR Data Point Densities in Digital Elevation Maps  
Brian C. Anderson, Space Systems Operations and Applied Physics  
September 2008  
Thesis Advisor: R.C. Olsen  
Second Reader: James H. Newman

104. The Uses of a Polarimetric Camera  
Phillip Smith, Space Systems Operations  
September 2008  
Thesis Advisor: R.C. Olsen  
Second Reader: R. Harkins

103. Extracting Hidden Trails and Roads Under Canopy Using LiDAR  
Apostolos Karatolios, Applied Physics  
Prokopios Krougios, Applied Physics and Electronic Warfare Systems Engineering  
December 2008  
Thesis Advisor: R.C. Olsen  
Co-Advisor: David C. Jenn

102. The Use of Commercial Remote Sensing in Predicting Helicopter Brownout Conditions  
Anthony Davis, Space Systems Operations  
September 2007  
Thesis Advisor: R.C. Olsen  
Second Reader: Dave Trask

101. Identifying Roads and Trails Hidden Under Canopy Using LiDAR  
Fermin Espinoza, Space Systems Operations  
Robb E. Owens, Space Systems Operations  
September 2007  
Thesis Advisor: R.C. Olsen  
Second Reader: Mark C. Abrams

100. Assessing the Ability of Hyperspectral Data to Detect Lyngbya Sp.: A Potential Biological Indicator for Presence of Metal Objects in the Littoral Environment  
James R. Blankenship, Space Systems Operations  
December 2006  
Thesis Advisor: Daria Siciliano  
Thesis Co-Advisor: R.C. Olsen
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<tr>
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<th>Department</th>
<th>Date</th>
<th>Thesis Advisor(s)</th>
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<tr>
<td>Detection and Characterization of Temporal Phenomena with High Resolution Satellite Imagery</td>
<td>Brian A. Young</td>
<td>September 2005</td>
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<td>Utilizing Synthetic Aperture Radar to Predict Helicopter Brownout</td>
<td>Mitchell Rios, Space Systems Operations</td>
<td>September 2004</td>
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<td>Investigation of Outer Length Scale in Optical Turbulence Using an Acoustic Sounder</td>
<td>Jeffrey T. Douds, Space Systems Operations</td>
<td>September 2004</td>
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85. Detecting and Measuring Temporal Phenomenon with High Resolution Satellite Imagery  
Andrew J. Hiltner, Space Systems Operations  
September 2003  
Thesis Advisor: R.C. Olsen  
Thesis Co-Advisor: Richard Harkins

84. Texture Analysis of High Resolution Panchromatic Imagery for Terrain Classification  
Matthew Humphrey, Applied Physics  
June 2003  
Thesis Advisor: R.C. Olsen  
Second Reader: Alan A. Ross

83. Passive Detection of Gases in the Atmosphere, Case Study: Remote Sensing of SO2 in the UV Using LINUS  
Anastasios G. Halvatzis, Physics  
December 2002  
Thesis Advisor: R.C. Olsen  
Second Reader: Richard M. Harkins

82. Design and First Operations of the Lineate Imaging Near-Ultraviolet Spectrometer (LINUS)  
Jean Gray, Applied Physics  
December 2002  
Thesis Advisor: R.C. Olsen  
Second Reader: Richard Harkins

81. Spectral Polarimetric LWIR Analysis  
G. M. Bonitz, Space Systems Operations  
December 2002

79. Target Detection in LWIR Spectral Imagery  
K. L. Olson, Applied Physics (Space Systems Engineering)  
December 2002

78. Remotely Sensed Density Measurements of Volcanic Sulfur Dioxide Plumes Using a Spectral Long Wave Infrared Imager  
A. G. Mares, Space Systems Operations  
Sept 2002  
Thesis Advisor: R.C. Olsen  
Second Reader: Paul G. Lucey

77. Scene Classification Using High Spatial Resolution Multispectral Data  
Jamada J. Garner, Applied Physics  
June 2002  
Thesis Advisor: R.C. Olsen  
Second Reader: David Trask

76. (Classified)  
A. Faust,  
June 2002

75. (Classified)  
H. Dantzler,  
June 2002

74. Terrain Categorization Using Multitemporal Infrared Imagery  
Julie M. Allfen, Space Systems Operations  
June 2001

73. Terrain Categorization Using Multitemporal Synthetic Aperture Radar (SAR)  
James G. Reese, Space Systems Operations  
June 2001

72. Design and Development of the Image Scanner for Lineate Imaging Near Ultraviolet Spectrometer (LINUS)  
Richardo C. Kompatzki, Applied Physics  
December 2000  
Thesis Advisor: D. Scott Davis  
Thesis Co-Advisor: R.C. Olsen
70. Feasibility Study on the Utilization of Satellite Infrared Imagery in the Detection of Submarine Generated Signals
Scott R. Diaz, Space Systems Operations
September 2000
Thesis Co-Advisor with Alan Ross

69. Non-Imaging Detection and Tracking of Mobile Targets
Nathan E. Sukols, Space Systems Operations
September 2000

68. Visual and Near-Infrared Imagery Using NVIS
David R. Perry, Space Systems Operations
September 2000
Thesis Advisor: R.C. Olsen
Second Reader: Alan Ross

67. Applications of Thermal Hyperspectral Imagery for Specific Material Identification
Kyle P. Higgins, Space Systems Operations
September 2000

66. Prototype Design for NPSAT Visible Imager
Michael J. Robison, Astronautical Engineering
June 2000
Thesis Advisor: R.C. Olsen
Second Reader: Brij N. Agrawal

65. Terrain Categorization Using Multispectral and Multitemporal Imagery
Michael T. Lisa, Applied Physics
June 2000

64. The Potential Impact of Hyperspectral Imagery on Amphibious Warfare Planning
Keith W. Maly, Scientific and Technical Intelligence
December 1999
Thesis Advisor: William K. Krebs
Thesis Co-Advisor: R.C. Olsen

63. Operation and Calibration of the NPS Ultraviolet Imaging Spectrometer (NUVIS) in the Detection of Sulfur Dioxide Plumes
Stephen A. Marino, Applied Physics
December 1999
Thesis Advisor: David S. Davis
Thesis Co-Advisor: R.C. Olsen

62. Sensor Fusion for Terrain Categorization
Peter N. Shepard, Systems Technology (Scientific and Technical Intelligence)
December 1999

61. Shallow Water Bathymetry at Lake Tahoe from AVIRIS Data
Thomas M. Fisher, Air-Ocean Sciences
December 1999
Thesis Advisor: R.C. Olsen
Thesis Co-Advisor: Pierre-Marie Poulain

60. The Short Wave Infrared Signature of Volcanic Ash: Remote Detection and Characterization
Stephen A. Finney, Ph.D., Physics
September 1999

59. (Classified) J. Keane
September 1999

58. Oceanographic De-Glinding Techniques for Hyperspectral ASW
James A. Novak, Physical Oceanography
September 1999

57. Remote Sensing support of Tomahawk Land Attack Missile Strike Combat Assessment
James R. Ronka, Space Systems Operations
September 1999

56. Sensor fusion with National Technical Means (tentative title)
C. S. Seitz, Space Systems Engineering/Aeronautical Engineering
December 1998
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<th>Number</th>
<th>Title</th>
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<td>54</td>
<td>(Classified)</td>
<td>M. Stubblefield</td>
<td>December 1998</td>
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<td>51</td>
<td>(Classified)</td>
<td>R. Robson</td>
<td>June 1998</td>
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<td>50</td>
<td>Naval Infrared Imagery Exploitation</td>
<td>Karl D. Deans, Space Systems Operations</td>
<td>September 1997</td>
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<td>48</td>
<td>The Utility of Hyperspectral Data to Detect and Discriminate Actual and Decoy Target Vehicles</td>
<td>Steven M. Bergman, Systems Technology (Scientific and Technical Intelligence)</td>
<td>December 1996</td>
<td>R.C. Olsen</td>
<td>David D. Cleary</td>
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<td>43</td>
<td>Survey of PDP Data from PMG DELTA II</td>
<td>Chia-Hwa Chi, Applied Physics</td>
<td>June 1995</td>
<td>R.C. Olsen</td>
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<td>41</td>
<td>Synthetic Aperture Radar (SAR) Applications in Littoral Regions</td>
<td>Jean-Pierre Bolat, Space Systems Engineering</td>
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<td>R.C. Olsen</td>
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40. Synthetic Exploitation of Remote Sensing Data in Support of Littoral Warfare
Julie M. LaPoint, Space Systems Engineering
June 1995

39. Hyperspectral Imagery Analysis Using Neural Network Techniques
Mark M. Gautreaux, Applied Physics
June 1995
Thesis Advisor: R.C. Olsen
Thesis Co-Advisor: D. Walters

William A. Hesser, Applied Physics
June 1995
Thesis Advisor: R.C. Olsen
Thesis Co-Advisor: M. C. Colton

37. An Analysis of Hyperspectral Imagery Data Collected During Operation Desert Radiance
Matthew E. Fay, Systems Technology (Space Systems Operations)
June 1995
Principal Advisor: R.C. Olsen
Second Reader: Terry Alfriend

36. Spectral Mixing of Camouflaged Targets
John W. Chandler, Applied Physics
Suzanne E. Lyon, Applied Physics
December 1994
Thesis Advisor: R.C. Olsen

35. Three-Dimensional Computer Graphics Visualization of Target Detection
Mehmet Gorgulu, Applied Physics
Mustafa Yilmaz, Applied Physics
December 1994
Thesis Advisor: R.C. Olsen
Thesis Co-Advisor: David R. Pratt

34. Validation of Special Sensor Microwave/Imager Ocean Surface Wind Retrievals in Equatorial Regions
Elton G. Sayward, Applied Physics
December 1994
Thesis Advisor: R.C. Olsen
Thesis Co-Advisor: M. C. Colton

33. Space Tether - Radar Data Processing
Wayne A. Brewster, Electrical Engineering and Applied Physics
September 1994
Thesis Advisor: R.C. Olsen
Thesis Co-Advisor: Ralph Hippenstiel

32. Radar Observations of Field-Aligned Plasma Propagations Associated with NASA'S PMG Experiment
Darren M. Olson, Systems Technology (Space Systems Operations)
September 1994
Thesis Advisor: R.C. Olsen

31. Electrodynamic Behavior of PMG-DELTA
Chung-Jen Chang, Engineering Acoustics
June 1994
Thesis Advisor: R.C. Olsen
Second Reader: Suntharalingam Gnanalingam

30. Meteor Burst Communication with Artificial Trails
Tommy S. Smith, Systems Technology (Command, Control, and Communications)
June 1994
Principal Advisor: R.C. Olsen
Associate Advisor: Dan C. Boger

29. First Principles Used in Orbital Prediction and an Atmospheric Model Comparison
Brian E. Bowden, Astronautical Engineering
June 1994
Thesis Advisor: R.C. Olsen

28. Thermospheric Modeling Accuracies Using F10.7 and Ap
John J. Adler, Physics
December 1993
Thesis Advisor: I. M. Ross
Thesis Co-Advisor: R.C. Olsen
27. **Space Experiments Aboard Rockets: SPEAR III**
James H. Morris, Applied Physics (Space Systems Engineering)
March 1994
Thesis Advisor: R.C. Olsen

26. **Spectral and Polarimetric Analysis of Hyperspectral Data Collected by an Acousto-Optic Tunable Filter System**
Melissa Sturgeon, Systems Technology (Space Operations)
September 1993
Thesis Advisor: Philip A. Durkee

25. **Electron Beams at Geosynchronous Orbit**
Raymond C. Gaw, Physics
September 1993
Thesis Advisor: R.C. Olsen

24. **Ionospheric Photoelectrons Measured at Geosynchronous Orbit**
John S. Laszakovits, Physics
June 1993
Thesis Advisor: R.C. Olsen

23. **Detailed Analysis Case Studies of Trapped Plasmas at the Earth's Magnetic Equator**
Eric S. Lantto, Physics
June 1993
Thesis Advisor: R.C. Olsen

22. **Design and Evaluation of Ion Source for Satellite Charge Control**
Michael E. Melvin, Physics
June 1992
Thesis Advisor: R.C. Olsen

21. **Survey of Spacecraft Charging Behavior for the Geosynchronous Satellite 1989-046**
David P. Fiely, Physics
March 1992
Thesis Advisor: R.C. Olsen

20. **On the Consequences of Bi-Maxwellian Distributions on Parallel Electric Fields**
Lewis J. Scott, Physics
December 1991
Thesis Advisor: R.C. Olsen

19. **Survey of Trapped Plasmas at the Earth's Magnetic Equator**
Peter G. Bracco, Physics
December 1991
Thesis Advisor: R.C. Olsen

18. **Investigation of Deep Dielectric Charging and Subsequent Currents on Geosynchronous Spacecraft**
Donald S. Smith, Physics
December 1991
Thesis Advisor: R.C. Olsen

17. **Comparison of Alkali Ion Emitters**
Dean A. Gant, Physics
December 1991
Thesis Advisor: R.C. Olsen

16. **Satellite Anomalies and Electrostatic Surface Discharges**
Yan Chun Wong, Systems Technology (Space Systems Operations)
September 1991
Thesis Advisor: R.C. Olsen

15. **Arcjet Plume Ionization Effects on Exposed Solar Array Conducting Surfaces**
Richard W. Evert, Physics
September 1991
Thesis Advisor: R.C. Olsen

14. **Satellite Charge Control with Lithium Ion Source and Electron Emission**
Chong Soo Ryu, Physics
December 1990
Thesis Advisor: R.C. Olsen

13. **Determination of SPEAR-1 Rocket Body Potential During High-Voltage Experiments**
Thurston Van Horn, Physics
June 1990
Thesis Advisor: R.C. Olsen

12. **Lithium Ion Source for Satellite Charge Control**
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<tr>
<td>Tae Ik Song, Physics</td>
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<tr>
<td>June 1990</td>
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<td>Thesis Advisor: R.C. Olsen</td>
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<th>10.</th>
<th>Dielectric Charging as a Catalyst to the Formation of Potential Barriers on Synchronous Orbit Satellites</th>
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<tr>
<td>Maude E. Young, Physics</td>
<td></td>
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<tr>
<td>March 1990</td>
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<tr>
<td>Thesis Advisor: R.C. Olsen</td>
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<th>Physical Processes in Hollow Cathode Discharge</th>
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<tr>
<td>Hwang-Jin Han, Physics</td>
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<td>December 1989</td>
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<td>Thesis Advisor: R.C. Olsen</td>
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<th>Hollow Cathode Plasma Source Characteristics</th>
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<td>Young-chul Park, Physics</td>
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<td>December 1989</td>
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<td>Thesis Advisor: R.C. Olsen</td>
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<th>7.</th>
<th>Definition Study and Model for a Tethered Sounding Rocket</th>
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<tr>
<td>Sang Il Yoon, Physics</td>
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<tr>
<td>December 1988</td>
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<td>Thesis Advisor: R.C. Olsen</td>
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<th>6.</th>
<th>Design of an ELF/VLF Satellite for Under the Ice Submarine Communications</th>
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<tbody>
<tr>
<td>Gary C. Thompson, Space Systems Operations</td>
<td></td>
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<tr>
<td>September 1988</td>
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<td>Thesis Advisor: R.C. Olsen</td>
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<th>5.</th>
<th>Ions Generated on or Near Satellite Surfaces</th>
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<tr>
<td>Christopher W. Norwood, Physics</td>
<td></td>
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<tr>
<td>June 1988</td>
<td></td>
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<tr>
<td>Thesis Advisor: R.C. Olsen</td>
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<th>Ions Generated Electromagnetic Interference on the SCATHA Satellite</th>
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<tr>
<td>Leonard E. Weddle, Physics</td>
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<td>December 1987</td>
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<tr>
<td>Thesis Advisor: R.C. Olsen</td>
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<td>Donald R. Lowery, Physics</td>
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<th>2.</th>
<th>Observations of a Hydromagnetic Wave in the Earth's Magnetosphere</th>
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<td>John W. Patterson, Physics</td>
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<th>1.</th>
<th>Project Skylite: A Design Exploration</th>
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<td>William J. Welch, System Technology (Space Systems Operations)</td>
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<td>Mark F. Landers, System Technology (Space Systems Operations)</td>
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