

Emails from July, 2016 to June, 2018

July, 2016

7/22/16 Comparison of coated and uncoated .8 inch diameter cube corner
7/24/16 New Lares 50 cm sphere, .8 inch diameter uncoated cubes no dihedral angle offset Randomized orientations
7/24/16 New Lares 40 cm diameter, 1.5 inch uncoated cubes, dihedral angle 1.25 ± 0.5 arcsec
7/25/16 Optimization of cube corner size
7/25/16 Lageos 60 cm diameter, 1.5 inch uncoated cubes, dihedral angle 1.25 ± 0.5 arcsec
7/25/16 Lageos 40 cm diameter, 1.0 inch uncoated cubes, dihedral angle 0.00 ± 0.5 arcsec
7/25/16 Lageos 45 cm diameter, 1.125 inch uncoated cubes, dihedral angle 0.00 ± 0.5 arcsec
7/26/16 New Lares 40 cm diameter, 1.2 inch uncoated cubes, dihedral angle 0.00 ± 0.5 arcsec
7/27/16 Optimization of cube corner size for Cross section
7/28/16 Summary of cases
7/30/16 Polarization effects in LAGEOS
7/31/16 Polarization effects in LAGEOS 40 cm array 1.0 inch uncoated cubes, dihedral angle offset $0.00 \pm .5$ arcsec
7/31/16 Polarization effects in LARES 40 cm 1.5 inch uncoated cubes, dihedral angle offset 1.25 arcsec

August, 2016

8/2/16 Circularizing the diffraction pattern of a set of uncoated cubes with Dihedral angle offsets and Linear polarization
8/3/16 Nasa_tp3400 Convert Coordinates of cube corners for LAGEOS-2 from PDF to TEXT
8/3/16 plot cube corners in rows 1 and 2
8/6/16 Polarization effects in LAGEOS 40 cm array 1.0 inch uncoated cubes, dihedral angle offset $0.00 \pm .5$ arcsec
8/6/16 Dihedral angle tolerance table 40cm sphere 1.0 inch diameter uncoated cubes
8/6/16 Polarization effects in LARES 40 cm 1.5 inch uncoated cubes, dihedral angle offset 1.25 arcsec
8/7/16 Polarization effects in LARES 40 cm 1.5 inch uncoated cubes, dihedral angle offset 1.25 arcsec
8/7/16 Coordinates for LAGEOS-2 cubes
8/8/16 Processed coordinates for LAGEOS-2 cubes
8/8/27 orientation and spacing of LAGEOS-2 cubes
8/9/16 Calculation of absolute cross section

8/12/16 LAGEOS-2 Transfer Function
8/13/16 LAGEOS-2 60 cm sphere with 426 uncoated cubes Asymmetry vs dihedral angle offset Linear polarization 1.5 inch cubes
8/13/16 LARES-2 40 cm sphere with 450 uncoated cubes Asymmetry vs dihedral angle offset Linear polarization 1.0 inch cubes
8/13/16 LARES-2 40 cm sphere with 450 uncoated cubes Asymmetry vs dihedral angle offset Linear polarization 1.0 inch cubes (corrected)
8/15/16 Equations for Dihedral angle offsets
8/20/16 Polarization effects in LARES 40 cm 1.5 inch uncoated cubes, dihedral angle offset 1.25 arcsec
8/21/16 Polarization effects in LAGEOS 40 cm array 1.0 inch uncoated cubes, dihedral angle offset 0.00 +/- .5 arcsec
8/22/16 LAGEOS-2 Transfer Function (revised)
8/23/16 Asymmetry of the centroid Positive and negative dihedral angle offsets Linear polarization LARES-2 40 cm sphere, 204 uncoated 1.5 inch cube
8/24/16 Asymmetry of the centroid Positive and negative dihedral angle offsets LARES-2 40 cm sphere, 450 uncoated cubes Linear polarization, 1.0 inch cubes
8/25/16 Asymmetry of the centroid Positive and negative dihedral angle offsets LAGEOS 60 cm sphere, 450 uncoated cubes Linear polarization, 1.5 inch cubes

September, 2016

9/1/16 Single uncoated cube corner, 1.0 inch diameter, linear vertical polarization

October, 2016

10/7/16 LAGEOS-2 Polarization Asymmetry Comparison of Centroid and Constant Fraction Detection Systems
10/15/16 LAGEOS-2 Polarization Asymmetry David Arnold (Potsdam paper)
10/21/16 LARES-2 Transfer Function Using the measured dihedral angles of 10 test cubes

November, 2016

11/22/16 Histogram for LAGEOS-2 (n=1.461)
11/22/16 Histogram for LAGEOS-2 (n=1.484)
11/23/16 Histogram for LAGEOS-2 (both 1.461 & 1.484)

December, 2016

12/22/16 LAGEOS Range Correction Centroid and Constant Fraction Discriminator vs Pulse length, Signal strength, and Receiver rise time
12/23/16 LAGEOS Range Correction Centroid and Constant Fraction Discriminator vs Pulse length, Signal strength, and Receiver rise time (revised)

January, 2017

1/3/17 LAGEOS Range Correction Centroid and Constant Fraction Discriminator vs Pulse length, Signal strength, and Receiver rise time (Revision again)
1/4/17 LAGEOS Range Correction Centroid and Constant Fraction Discriminator vs Pulse length, Signal strength, and Receiver rise time (revision 2)
1/4/17 Polarization effects in LAGEOS 40 cm array 1.0 inch uncoated cubes, dihedral angle offset 0.00 +/- .5 arcsec
1/9/17 Effect of Polarization, Pulse length, Signal strength, and detector Rise time LAGEOS-2
1/10/17 Lageos-2 Centroid, halfmax, first PE, fixed threshold
1/10/17 Lageos-2 Centroid, halfmax, first PE, fixed threshold (more detail)
1/11/17 Effect of Polarization, Pulse length, Signal strength, and detector Rise time LAGEOS-2
1/12/17 LAGEOS-2 Study of Polarization, Pulse length, Signal strength, and detector Rise time
1/15/17 LAGEOS-2 Transfer Function (revised)
1/21/17 LAGEOS-2 Transfer Function (correct .2703 radius)
1/27/17 LAGEOS-2 Polarization, Pulse length, Signal strength, and detection system (revisions)
1/27/17 LAGEOS Pulse length 300ps, Receiver rise time 300ps
1/31/17 LAGEOS Pulse length 300ps, Receiver rise time 300ps (large signal)

February, 2017

March, 2017

3/21/17 LARES-2 1.0 inch uncoated cubes

April, 2017

4/3/17 LARES-2 1.0 inch uncoated cubes
4/19/17 LARES-2 302 uncoated 1.0 inch cubes
4/24/17 LARES-2 310 uncoated 1.0 inch cubes
4/24/17 Lares-2 Compare 288, 302, 310 cubes 1.0 inch uncoated
4/26/17 Lares-2 cubes sorted by Colatitude

May, 2017

5/2/17 Temperature matrix for the cube corner
5/12/17 LARES-2 Uncoated 1.0 inch cubes 278 Asymmetric & 272 Symmetric
5/14/17 LARES-2 284 Uncoated 1.0 inch cubes
5/15/17 LARES-2 284 Uncoated 1.0 inch cubes Symmetric

5/17/17 LARES-2 Uncoated 1.0 inch cubes 7th Configuration
5/17/17 LARES-2 264 Uncoated 1.0 inch cubes Seventh configuration (revised)
5/17/17 LARES-2 282 vs 278 Uncoated 1.0 inch cubes Ninth configuration
5/17/17 Plot Lares cubes viewed from the X, Y, Z, -X, -Y, -Z axes
5/24/17 LARES-2 303 uncoated 1.0 inch cubes
5/28/17 LARES-2 302 uncoated 1.0 inch cubes Third configuration
5/28/17 Revise figures in Lares reports dated 3/14/17, 3/15/17, 3/17/17
5/29/17 Revise figures in Lares reports dated 3/8/17, 3/21/17, 3/24/17
5/30/17 CCR distributions with NO separation system interfaces Analysis of optical performances
5/30/17 CCR distributions with separation system interfaces Analysis of optical performances

June, 2017

July, 2017

7/03/17 Lares-2 Thermal distortion vs cube size
7/05/17 My thermal simulations for LAGEOS Vs Bendix simulations
7/05/17 Comparison with of Bendix Lageos-1 simulations
7/05/17 Optical performance with Mount conductance of 5 milliwatts/deg-K per cube
7/05/17 LAGEOS Thermal/Vacuum test, Retroreflector and Mount Thermal Performance
7/05/17 Thermal simulations Antonio Paolozzi Cases 1 - 7
7/05/17 Temperature vs time vs cavity emissivity
7/05/17 Temperature difference vs emissivity of the cavity
7/15/17 Effect of mount conductance
7/10/17 1.0 inch cube with strong thermal contact Dihedral angle 2.0 arcsec, isothermal vs thermal
7/11/17 Floating mount, dihedral angle +2.00 arcsec, isothermal vs thermal
7/12/17 Floating mount, dihedral angle -1.25 arcsec, isothermal vs thermal
7/12/17 Bendix Case 13, 1.5 inch, Dihedral angle -1.25 arcsec thermal vs isothermal
7/14/17 Dihedral angle offset +2.00 arcsec, isothermal vs thermal
7/14/17 1.0 inch Uncoated cube, Floating mount, Dihedral angle +1.25 arcsec, isothermal vs thermal
7/17/17 Cross section Vs Mount conductance, 1.0 inch uncoated cube, 1.25 arcsec dihedral angle
7/23/17 Mount conductance Cases 1 - 7

August, 2017

8/04/17 Case 12, Pressure on the cube, Dihedral angle 1.25 arcsec, isothermal vs thermal
8/05/17 Case 11, Floating mount, Dihedral angle 1.25 arcsec, isothermal vs thermal
8/05/17 Cross section of a LAGEOS cube corner vs incidence angle, 1.5 inches
8/05/17 Case 11 full analysis

8/10/17 Case 11 different computer model
8/20/17 Farfields vs temperature gradient and offset angle, Uncoated 1 inch cube, Linear vertical polarization
8/20/17 Farfields vs temperature gradient - compare numerical ray tracing with analytic solution.
8/21/17 Plots of phase front from ray tracing.
8/24/17 Plots of phase front for thermal simulations done in Italy.
8/29/17 Plots of phase front for cases 11 and 12
8/30/17 Phase plots for dihedral angle offsets

September, 2017

9/01/17 Cube corner glued to the mounting tabs
9/01/17 Effect of conductance on cross section and temperature, Dihedral +1.25 arcsec, Mount 303 K
9/11/17 LARES-2, 303 uncoated 1.0 inch cubes, Final configuration
9/14/17 LARES-2, 303 uncoated 1.0 inch cubes, Final configuration, expanded calculation
9/27/17 Range correction for LAGEOS-2 vs Pulse width, detector rise time, signal strength, and type of detection system (Riga paper)
9/28/17 Design of the LARES-2 Array by David Arnold (poster for Riga conference)

October, 2017

10/08/17 Use of correlation function to determine the range correction, with data clipping (Riga paper)
10/10/17 Correlation coefficient, LAGEOS range residuals
10/14/17 Compare computed histogram with actual data

November, 2017

11/01/17 Antonio Cross section vs Theta, at Phi 40 deg. (loss of total internal reflection)
11/02/17 10:51 am, Lemoine, Cross section of ERS (Envisat), 2003
11/02/17 12:37 pm Jose, Analysis of HerstmonceuxRev2 LAGEOS data using correlation coeff
11/03/17 10:43 am, Lemoine, ERS extended to 90 degrees.
11/03/17 12:53 pm, Lemoine, HerstmonceuxRev2.
11/07/17 file AbstractLARES2
11/08/17 Appleby, file Quantization
11/09/17 10:27 am Data Clipping, "file Clipping", LAGEOS histogram with zero input pulse
11/09/17 Reinhart etc., 11:26 am file "ClippingRev"
11/13/17 Jose file CircularOrbit, use of orbit to obtain residuals

11/13/17 Jose add dv/dr calculation
 11/14/17 send file Case11,12 (Aug,17)to Reinhart regarding L1 L2 difference
 11/15/17 send quantization and correlation papers to Erricos
 11/15/17 paper from Ignazio on test of equivalence with LAGEOS and LARES
 11/15/17 email to Ignazio on L1 L2 observed difference
 11/15/17 from Reinhart, ranges to L2 are longer
 11/18/17 Riga invoice
 11/19/17 9:02 am Erricos file ClippingRev2
 11/19/17 9:56 am Reinhart Asymmetry of the background noise, Herstmonceux Lageos pass
 11/20/17 Target test convolved with Lageos histogram. File Target&Lageos
 11/22/17 Antonio. Cross section vs rotation angle at $\Phi = 40$, file "Rotation Angle"
 11/23/17 Effect of rotating all the cubes by 7 deg, file "Tabs"
 11/25/17 Effect of having all orientations the same, file "Tabs0,180"
 11/25/17 Jose,Reinhart. File "Correlation.doc", fitting vs correlation
 11/26/18 Antonio file "southpole" plot showing hole in the distribution
 11/27/17 11:46 am Antonio, sorting cubes by Latitude
 11/27/17 06:49 pm Analysis in coordinate system of South Pole. File "Analysis South Pole"
 11/27/17 11:46 pm, plot target test at Herstmonceux, file "TargetTest"
 11/28/17 LAGEOS-2 Rev.doc
 11/30/17 Reinhart file "LageosPass" histogram
 11/30/17 Mike 3 year Proposal
 11/30/17 Reinhart Target test in word and txt format
 11/30/17 LageosPass in text format

December 2017

12/01/17 Convolution of target test with LAGEOS array, file 'Convolve'
 12/01/17 Target test from Jose, file ktest.doc
 12/02/17 file ClippingRev3, Study of data clipping vs clipping,
 background noise, and error in the fitting to flatten the residuals
 12/02/17 file ClippingRev4.
 12/03/17 9 am Comparison with Reinhart data clipping calculations
 12/03/17 2 pm File 'Compare' convolution of target with LAGEOS with Herstmonceux pass
 12/04/17 1 pm Target calibration
 12/04/17 2 pm SPAD tail is a problem
 12/13/17 12 pm Lares-2 303 cubes 208 mm radius, 1.2 mm
 12/14/17 4 pm test on a real data set
 12/15/17 4 pm 'Lares-2Rings' 18 Rings 368 cubes, radius .2 meters, .2 mm
 12/15/17 7pm 'Lares2-208' 303 cubes
 12/21/17 2 pm Bianco 'Rotation angle', 'LaresFinal6,7,8'
 12/21/17 3 pm 'LageosHistogram'

January 2018

01/04/18 8 am Kirchner, Wang 'Histogram', 'return'
01/11/18 3 PM Statement of work 2018
01/15/18 10 am report for last year
01/17/18 11 am thank you Wang (Kirschner)
01/31/18 2 pm Pearlman question on velocity aberration
01/31/18 3 pm Pearlman correct

February 2018

02/08/18 4 pm budget for next year
02/26/18 4 pm Pearlman inquiry on proposal
02/27/18 Cases 11 (floating - good), 12 (pressure - poor)

March 2018

03/15/18 9 am Pearlman proposal 'Lares-2', 'Canberra2006' invoice
03/15/18 10 am Pearlman, Erricos, JOG, Lares-2 article?
03/18/18 Antonio Curriculum for contract
03/19/18 5 pm casle 16 and 17
03/21/18 10 am Antonio 'TaxCode', 'Passport2025'
03/22/18 8 am Massimo Gitto 'TaxForm'
03/22/18 8 pm Antonio. Wrong statements on emissivity.
03/23/18 9 am Reinhart, discuss thermal problems
03/23/18 12 pm, Reinhart, analysis of cases 16 and 17
03/23/18 2:10 pm Reinhart attach Case 16 (bad) ,17 (poor)
03/23/18 8:03 pm Antonio Cases 16, 17 (poor)
03/24/18 10 am Antonio cannot include thermal effects
03/24/18 10:25 am include Reinhart
03/24/18 12 pm. Antonio - false argument about emissivity
03/24/18 12:32 pm Lageos 1 and 2 different. Antonio - different materials
03/24/18 3 pm Antonio et al, discuss thermal modeling of core and cube
03/27/18 12 am Pearlman proposal, summary of work
03/29/18 8 am Pearlman, I am doing all work whether or not funded.
03/30/18 5pm Pearlman revised proposal

April, 2018

04/03/18 7 pm Antonio, emissivity argument wrong, need simulation, L1 L2
04/04/18 12 pm Antonio format problem
04/05/18 11 am Antonio 'Copper.pdf' plots along X and Z axis. Problems at the ends
04/08/18 4 pm Antonio thermal problems

04/08/18 6 pm Antonio vacuum deposition?
04/17/18 7 am Antonio contract defer taxes
04/18/18 9 am Antonio IRS problems
04/18 /18 1 pm Antonio residency certificate
04/20/18 7 pm Pearlman Vita employment date
04/26/18 7 pm copper surprise, uniform temp, Matzner? Ignazio thermal thrust 12 deg
vs 1 deg diff urgent
04/30/18 1 pm Antonio, Ignazio, Erricos Proposal for thermal design.

May, 2018

05/08/18 7 pm Pearlman starting date at SAO
05/17/18 11 am Ethel Dotts purchase order SAO

June, 2018

06/05/18 1 pm Erricos LARES-2 paper
06/06/18 11 am Erricos copy of STARLETTE paper
06/12/18 11 am Antonio US residency certificate
06/12/18 11 am Antonio, Pimpinelli, US residency, INFN-LNF FORM
06/15/18 7 am Antonio need thermal parameter for LARES-2 paper
06/27/18 5 pm Antonio wire transfer received \$5604.00 on 7/22/18