Change modifications to version 2.20

2017-08-29 MeteorCal bug fix that used CTRL-M and CR, switched to G & CTRL-G

2017-08-28 CaptureDongles checks for camera# in CameraSites and fps consistency

2017-08-28 Thumbnails removed slow startup and displays unique cameras

2017-08-28 MeteorCal\_AutoUpdate recompiled

2017-08-28 MeteorCal added manual adjustment of brightness and noise floor

2017-08-18 Coincidence added additional constraints for better aggregation & automation

2017-08-08 FTP\_DetectSingleFF adjusted to detect only if min of 5 measurements

Change modifications to version 2.10

2017-07-27 MeteorCal added magnitude limit adjustment to catalog star display

2017-07-27 AutoCal fix to midnight range and log file copy command

2017-06-23 Removed global arrays from SPFF\_SingleFileViewer

Recompile and relink of ALL apps, updated header docs concerning argument lists

Trajectory code added site motion, removed from orbit function (UWO version)

Trajectory PSO has config file to set fidelity of fit versus runtime in Coincidence

Added multiple features and controls to Confirmation

Autocal can run on a single camera

Single station radiant association correction for zenith attraction

Large frame size versions of MeteorCal and Nudger created to handle monitor display

Change modifications to version 2.00

Occured during the period 2016-12-4 through 2016-12-31 with recompile and relink of ALL apps

Switched all apps to handle 1 million camera numbers, new FF and CAL filenaming, new FF content

Backwards compatible with all older FF and CAL files

Interfaced revised trajectory code + PSO based on development work with the UWO

Change modifications to version 1.64

2016-12-17 AutoCal does multiple days in a single FF folder (per camera, per day)

2016-11-30 Recompiled and linked ALL applications - saved entire CAMS development folder

2016-09-24 Capture4 replaced HT with cluster/tracker detection

2016-08-18 AutoCal added constraint of center shift < 5 pixels

2016-08-16 DetectSingleFF exit code = 0 for detection, 99 for no detection, 1 for errors

2016-06-19 DetectMultipleFF now merges the detectinfos when multiple processes run

2016-04-12 Nudger updated for batch non-interactive processing (+args FF, dRA, dDEC, dROLL)

2016-03-09 Tracking.h fixed memory leak by freeing rowmeas and colmeas

2016-02-18 CaptureDongles cam=-99 option, Sleep B4 exit, kdevice index fixes

2016-02-07 Revised DetectSingleFF using clustering/tracking and eliminated GetSegments

2016-01-04 Fix odd/even interleave multiple places - not a bug fix but for comment consistency

2016-01-02 Recompile and relink of all codes

2015-12-31 Chg ReprocessParameters.txt interleave comment from 3 to 0 for progressive scan

2015-11-22 Coincidence added rejected file output and accepted YES, NO, MAYBE logic

2015-11-22 FTP open, read, write, close functions pass in new file index argument

2015-11-17 Functions for 5x7 and 7x9 text generators added gray level argument

Change modifications to version 1.63

2015-09-27 FTP multiple dongles code bug fixes --> test version 2

2015-09-27 SP coincidence abundance bug fixes

2015-07-11 SP calibration functions have spectra for planets Venus and Jupiter

2015-07-11 Split GratingManualCal into SP\_ResponsivityCal and SP\_ExtinctionCal

2015-05-02 Added FF validation function to Reprocess

2015-04-26 Archive\_FTP added FF validation function and inserted into Thumbnails

2015-04-26 Thumbnails converted to be Linux compatible

2015-04-04 Mosaic added user inputs for average vs maxpixel, min elevation angle displayed

2015-03-08 Recompiled and relinked all codes

2015-03-07 MeteorScan upgrades:

Hough\_ptr fix for corner cutting test

Ignored cases in Hough peak test when chi = 0

Filter spin-up based on single pair HT scaled by nhough rather than nhough HTs

Made noise sequence for spinup by substituting gauss noise for max pixel

Change modifications to version 1.62

2015-02-15 Capture 1,2,4,8 added block and frame-to-frame timing/reports

2015-02-08 Recompiled and relinked all codes

2015-02-08 LeapSeconds.txt file updated to reflect Jul 1, 2014 leap second

2015-02-08 Capture8 interfaced to revised Sensoray 812 SDK v1.0.8, SetLevel, GetVideoStatus

2015-01-25 MeteorScan bumped pixels per frame search limit from 70 to 250 for telescopic

Change modifications to version 1.61

2015-01-23 SPFF\_SingleFileViewer added BMP output format

2015-01-11 FTP\_ Combine upgraded to merge in date/ time order of track events

2015-01-10 FTP\_ Confirmation and read IMOcalendar forces NULL on 4th character of IMOcode

2015-01-08 FTP\_ Confirmation added band line display toggle option for maxpixel display

2015-01-01 FTP\_ Reprocess fixes write of UNCALIBRATED.TXT to Detectinfo when no CAL file exists

2015-01-01 FTP\_FixCameraInterleave properly reads cam# for SP filename parsing

2015-01-01 FTP\_ Reprocess - ArchiveSP.cpp tests SP files <= 2014 to set interleave to 2 for 817 board

2015-01-01 Corrected comments for interleave flag 1=even/odd, 2=odd/even (note all Sensoray = 2)

2014-12-31 SPFF\_SingleFileViewer bug fix when trying to parse camera number from SP file

2014-12-31 FTP\_Reprocess bug fix for odd number of total frames in .bin file (SP case)

2014-11-22 FTP\_Capture8AndDetect stopped reporting dropped frames for inactive channels

2014-11-18 MeteorCal\_AutoUpdate fix to not copy all capture to binFiles when no prev CAL

2014-11-08 FTP\_Capture8AndDetect and Camera8LiveViewer initial testing completed

2014-09-25 FTP\_DetectMultipleFF fixed argument list index for batch mode read of FF folder

2014-08-27 Capture4 revised to write time span of each FF file to CaptureTimes.log

2014-08-22 Capture4 revised to ignore channels with no video signal

2014-08-17 FTP \_FixCoincidentDetectInterleave created to repair previously coincident tracks

2014-08-15 FTP\_FixDetectInterleave created to find/repair wrong starting field in detectinfo

2014-08-06 MeteorScan library Vmag limit dropped to +9.5 and faint stars brightened

2014-06-03 FTP\_CaptureAndDetect times out if no video signal by normal capture end (vice 2 min)

2014-05-25 FTP\_Confirmation added each IMO code and time to radiant association file

2014-05-14 FTP\_Confirmation fixed radiant count when clearing ring buffer, 25 track backup

2014-05-10 FTP\_ExtractDetectinfoMetadata moved to CM and ops

2014-05-10 SP\_GratingManualCal finialized and moved to CM and ops

2014-04-27 All codes rebuilt and archived for new version changes.

2014-04-27 MeteorProcessing.\* additions for spectral calibration (e.g. local midnight)

2014-04-26 DetectSingleFF, DetectMultiFF added lunar interference (in FOV, lunar phase) test

2014-04-26 Capture\*AndDetect ReprocessThread.h with efficient memory/build frame sequence

2014-04-25 Cloud detect bug #2 fix – flipped assignment of linearity and even spacing variables

2014-04-23 Cloud detect bug #1 fix – testing linearity on field centroids rather than frame centroids

2014-04-15 InversePoly function now mallocs all the working arrays – removed heap space allocation

Change modifications to version 1.6

2014-04-05 All codes rebuilt and archived for new version changes.

2014-04-03 Compute\_Inverse\_Poly function switched to dynamic allocation of arrays

2014-03-30 All MeteorCal\* apps updated histo\_equalize so ring-like display feature removed

2014-03-30 Coincidence set foreground per window for JPEG generation; CTRL-P early exit fix

2014-03-30 Capture\*andDetect, Reprocess use linearity thresholds for cloud miigation

2014-03-30 ReprocessParameters.txt added version# and four cloud mitigation parameters

2014-03-30 FrameGrabConfig.txt added two device number, brightness, contrast lines

Change modifications to version 1.5

2014-02-23 FTP\_MeteorProcessing.cpp & .h added functions for spectral processing calls

2014-01-18 Coincidence and PreCoincidence detectinfo read function change to NOT trim ends

2014-01-18 Coincidence and PreCoincidence logic modified for previous assoc and same site

2014-01-12 Thumbnails BMP file generation switched 24-bit RGB to 8-bit gray single plane output

2014-01-04 All codes rebuilt and archived for new version changes.

2013-12-31 Thumbnails updated to aggregate multiple FF files into single maxpixel snapshots

2013-12-20 New FTP\_MeteorCalNudgeUpdate to manually nudge then auto cal shifted camera

2013-12-08 Coincidence returns unused tracks to available meteor track pool

2013-12-08 Coincidence height tests to allow straddling of limits, no longer strictly within limits

2013-12-06 Coincidence allows user to jump ahead to halfway through the night

2013-11-29 DetectMultipleFF developed from NZ Capture16 driver and DetectSingleFF calls

2013-11-25 CalStarReconstitution initial development completed

2013-11-25 CaptureMultipleDonglesTest program created

2013-11-17 CalStarExtractor relinked with chg to MeteorCalFunctions hard dim to 576x768

2013-11-16 DetectSingleFF bug fix to add “UNCALIBRATED” cal filename if no cal files

2013-11-03 DetectSingleFF added Cal file lookup with default to uncalibrated

2013-10-26 StarIntegrator function - reset integrated star pixels to background

2013-10-13 Coincidence - added user-acceptance/threshold-reject report + diagnostic log output

2013-10-13 New FTP\_Capture16AndDetect.exe for NZ system

2013-10-13 New FTP\_DetectSingleFF.exe for NZ system

2013-10-13 New FTP\_CalStarExtractor.exe for NZ system

2013-10-13 FTP\_MeteorCalFunctions - added …StarExtractWrite function

2013-10-13 FTP\_MeteorCalFunctions - 3 cal exes affected by centroid (bckgnd removed) StarLocations

2013-10-13 All codes modified to reflect version change from 1.4 to 1.5 (new calibration centroid)

Change modifications to version 1.4

2013-10-12 All codes archived for new version changes.

2013-08-14 SPFF\_SingleFileViewer dimensions adjusted to accommodate 576x768

2013-08-05 CaptureAndDetect, CaptureTwoandDetect recompiled with new MeteorScan.lib

2013-08-05 MeteorScan.lib rebuilt with 576x768 maxrow x maxcol dimension

2013-07-11 SP\_Prescreen – reversed window 2 and 3 displays to move second movie to far right

2013-07-10 ApplyCal2Detect – eliminated getchar on program exit for batch file normal end

2013-07-05 CombineDetectinfo – New program to merge detectinfo files

2013-06-23 Coincidence – Revised gefdat folder to contain FIRBAL, MEAS, and the new MODEL files

2013-06-23 TrajectorySolution.h – Generates and returns model fit vectors lat,lon,h,r,v,ra,dec,tim

2013-06-23 Coincidence – Prints to console the trajectory # and time stamp on every display update

2013-06-23 Coincidence – No trajectory re-computation for lat/long image scale change

2013-06-22 Confirmation – Radiant association displayed and stats logged to file RadiantAssoc.txt

2013-06-21 Confirmation – Active radiant pointers added to display

2013-05-19 SP\_Detect16 – Scaled rowsum tracking arrays ave and thr by 4K

2013-05-01 Confirmation – Added maxpixel window and placeholders for radiant displays

2013-04-13 SPFF\_SingleFileViewer – AVI/JPEGs for multiple sequential files, date/time stamp

2013-04-10 SPFF\_SingleFileViewer - Added batch arg list, early video loop break, step fwd/back

2013-04-10 Thumbnails - Added batch arg list with decimation and file skip user inputs

2013-04-04 Thumbnails – New exe to build contact sheet of FF files within a folder as a BMP

2013-03-31 MeteorCal\_AutoUpdate – Redoes final cal per camera starting with best cal as input

2013-03-31 SP\_Prescreen – Allows early breakout of video display loop

2013-03-31 SP\_Prescreen – Skip next SP file for same camera within 5 seconds if “aircraft” rejection

2013-03-31 Confirmation – Allows early break-out of video display loop

2013-03-13 Confirmation - Added skip ahead by 100 tracks option using h or H keys