From: FSW1::STNJEHCES "John Hueber - (301) 286-2481" 14-JAN-1992 19:09:21.85
To: SCIVAX::FITCH,STNJEHCES
CC:
Subj: GIMP/OVERLITE PDL differences

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File ST$NSSC:[STNSSC1.FLIGHT.STNJEHCES.PDL]FOSDROP11.;4
82 ..MODIFIED : 10-JAN-92 ADD GIMP CORRECTION SUBROUTINE. PTR STP-G 1517. 001
83 NARRAY: INTEGER*2. 19952 ELEMENT ARRAY MAKING UP THE BULK OF COMMON/ZZNCOM,
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File ST$NSSC:[STNSSC1.FLIGHT.TEST.PDL]FOSDROP11.;1
82 NARRAY: INTEGER*2. 19952 ELEMENT ARRAY MAKING UP THE BULK OF COMMON/ZZNCOM,
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****
File ST$NSSC:[STNSSC1.FLIGHT.STNJEHCES.PDL]FOSDROP11.;4
134 YFGMPSTA: INTEGER*2. EQUIVALENCED TO NCVT(175). GIMP CORRECTIONS ENABLE !001
135 ..FLAG YFGIMPEN (BITS 1-15) AND YFGIMPER (BIT 16) WHERE BIT 16 = LSB. BIT !001
136 ..15 = 0 TO DISABLE GIMP CORRECTIONS FOR THIS OBSERVATION, BIT 15 = 1 TO !001
137 ..ENABLE GIMP CORRECTIONS FOR THIS OBSERVATION. BIT 16 = 0 MEANS NO GIMP !001
138 .. ERROR, BIT 16 = 1 MEANS GIMP ERROR OCCURRED DURING THIS OBSERVATION. !001
139 ..YFGIMPEN IS SET BY THE OBSERVATION SEQUENCE AT THE BEGINNING OF AN !001
140 ..OBSERVATION IF GIMP CORRECTIONS ARE TO BE SENT TO THE FOS, AND CLEARED !001
141 ..IF CORRECTIONS ARE NOT TO BE SENT. YFGIMPER IS CLEARED AT THE TIME !001
142 ..YFGIMPEN IS LOADED, AND SET WHEN AN ERROR IS DETECTED BY YFGIMP. !001
143 ..YFGMPSTA IS OUTSIDE OF THE EXTERNALLY SUBCOMMUTATED FOS ED TABLES AND !001
144 ..IS THEREFORE NOT ALTERED BY THE EXECUTIVE ED COLLECTION PROCESSOR. !001
145 YFIRMV: INTEGER*2. EQUIVALENCED TO NSIED(2). CONTAINS FOS FIRMWARE VERSION
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File ST$NSSC:[STNSSC1.FLIGHT.TEST.PDL]FOSDROP11.;1
133 YFIRMV: INTEGER*2. EQUIVALENCED TO NSIED(2). CONTAINS FOS FIRMWARE VERSION
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File ST$NSSC:[STNSSC1.FLIGHT.STNJEHCES.PDL]FOSDROP11.;4
208 .. 08-JAN-92 ADD GIMP CORRECTION SUBROUTINE. PTR STP-G 1517. 006
209 YSTBUF: NSIED(121). NUMBER OF FOS STATUS BUFFER ENTRIES SINCE THE LAST TIME THE
******
File ST$NSSC:[STNSSC1.FLIGHT.TEST.PDL]FOSDROP11.;1
196 YSTBUF: NSIED(121). NUMBER OF FOS STATUS BUFFER ENTRIES SINCE THE LAST TIME THE
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****
File ST$NSSC:[STNSSC1.FLIGHT.STNJEHCES.PDL]FOSDROP11.;4
238 ..YSPR1: NSIED(135). *** DELETED *** !006
239 YFXGIMPC: NSIED(135). CONTAINS THE CALCULATED X GIMP CORRECTION. FROM !006
240 ..YFHKPG (PROCESSOR 30). MINOR FRAME 14. !006
241 ..YSPR2: NSIED(136). *** DELETED *** !006
242 YFYGIMPC: NSIED(136). CONTAINS THE CALCULATED Y GIMP CORRECTION. FROM !006
243 ..YFHKPG (PROCESSOR 30). MINOR FRAME 15. !006
244 YKEEP: NSIED(137). COUNTER OF CONSECUTIVE MAJOR FRAMES IN WHICH THE FOS SERIAL
******
File ST$NSSC:[STNSSC1.FLIGHT.TEST.PDL]FOSDROP11.;1
225 YSPR1: NSIED(135). MINOR FRAME 14. SPARE.
226 YSPR2: NSIED(136). MINOR FRAME 15. SPARE.
227 YKEEP: NSIED(137). COUNTER OF CONSECUTIVE MAJOR FRAMES IN WHICH THE FOS SERIAL
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File ST$NSSC:[STNSSC1.FLIGHT.STNJEHCES.PDL]FOSDROP11.;4
251 YFGMPTIK: NSIED(139). COUNTER TO MAINTAIN DOMAIN OF INPUTS FOR GIMP !006
252 ..POLYNOMIALS IN UNITS OF 15 SECOND "TICKS". FROM YFHKPG (PROCESSOR !006
253 ..30). MINOR FRAME 18. !006!005
254 YTOFLG: NSIED(140). IF =1, YFOFF (PROCESSOR 27) HAS BEEN INVOKED BY AN APP-
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CVT = current value table

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File ST$NSSC:[STNSSC1.FLIGHT.TEST.PDL]FOSDROP11.;1
  234   ..MINOR FRAME 18.                                                    !005
  235   YTOFLG: NSIED(140). IF =1, YFOFF (PROCESSOR 27) HAS BEEN INVOKED BY AN APP-
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************
 ile ST$NSSC:[STNSSC1.FLIGHT.STNJEHCES.PDL]FOSDROP11.;4
  336   YFGMPFCE: NSIED(163). = 0 IF GIMP CORRECTION FUNCTION IS DISABLED, = 1 IF   !006
  337   ..GIMP FUNCTION IS ENABLED. INITIALIZED TO 0. FROM YFHKPG (PROCESSOR 30).   !006
  338   ..MINOR FRAME 42.                                                          !006
  339   YSAFCR: NSIED(164). NUMBER OF CONSECUTIVE MAJOR FRAMES IN WHICH FOS HAS
******
File ST$NSSC:[STNSSC1.FLIGHT.TEST.PDL]FOSDROP11.;1
  317   YSAFCR: NSIED(164). NUMBER OF CONSECUTIVE MAJOR FRAMES IN WHICH FOS HAS
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File ST$NSSC:[STNSSC1.FLIGHT.STNJEHCES.PDL]FOSDROP11.;4
  351   ..YSPR6: NSIED(168). *** DELETED ***                                       !006
  352   YFGMPCRE: NSIED(168). = 0 IF GIMP CORRECTIONS ARE NOT TO BE ISSUED TO FOS,  !006
  353   ..= 1 IF GIMP CORRECTIONS ARE TO BE ISSUED TO FOS. INITIALIZED TO 1. FROM   !006
  354   ..YFHKPG (PROCESSOR 30). MINOR FRAME 47.                                   !006
  355   YFGMPERR: NSIED(169). GIMP ERROR FLAG. IF = 0 THEN NO ERROR HAS OCCURRED,  !006
  356   ..IF = 1, AN ERROR HAS OCCURRED. MINOR FRAME 48.                           !006
  357   YSPR7: NSIED(170-180). ARRAY DIMENSIONED 11. SPARE. MINOR FRAMES 49-59.    !006
  358   %D UCSD-DEFINED DATA ELEMENTS IN ZZNCOM USED IN FOS APPLICATION PROCESSORS
******
File ST$NSSC:[STNSSC1.FLIGHT.TEST.PDL]FOSDROP11.;1
  329   YSPR6: NSIED(168). SPARE. MINOR FRAME 47.
  330   YSPR7: NSIED(169-180). ARRAY DIMENSIONED 12. SPARE. MINOR FRAMES 48-59.
  331   %D UCSD-DEFINED DATA ELEMENTS IN ZZNCOM USED IN FOS APPLICATION PROCESSORS
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  **********
ile ST$NSSC:[STNSSC1.FLIGHT.STNJEHCES.PDL]FOSDROP11.;4
  389   ..ADD GIMP CORRECTION SUBROUTINE. PTR STP-G 1517. 08-JAN-92 011
  390   ..CHANGE OVERLITE ERROR RESPONSE. PTR STP-G 1518. 13-JAN-92 012
  391   ..YFDATA DEFINES DATA ELEMENTS IN ZZNCOM USED IN FOS APPLICATION PROCESSORS,
******
ile ST$NSSC:[STNSSC1.FLIGHT.TEST.PDL]FOSDROP11.;1
 362   ..YFDATA DEFINES DATA ELEMENTS IN ZZNCOM USED IN FOS APPLICATION PROCESSORS,
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File ST$NSSC:[STNSSC1.FLIGHT.STNJEHCES.PDL]FOSDROP11.;4
  595   YFCLDCMD: INTEGER*4 ARRAY DIMENSIONED (6). USED TO HOLD A COPY OF THE       !012
  596   ..FOLLOWING COMMANDS TO BE PUT INTO FOS UNIQUE SEQUENCE 3 WHEN AN OVERLITE  !012
  597   ..ERROR IS DETECTED: /T50                                                   !012
  598   ..                   /YENTRNC/2   ! CLOSE ENTRANCE PORT                     !012
  599   ..                   /T50                                                   !012
  600   ..                   /MNOPRATE                                              !012
  601   ..USED BY YFHC2A IN PROCESSOR 30 (YFHKPG).                                  !012
  602   YFDDMSG: INTEGER*2. B-SIDE DISC DAC ERROR REPORT INTERLOCK FLAG. IF = 1
******
File ST$NSSC:[STNSSC1.FLIGHT.TEST.PDL]FOSDROP11.;1
  566   YFDDMSG: INTEGER*2. B-SIDE DISC DAC ERROR REPORT INTERLOCK FLAG. IF = 1
************
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File ST$NSSC:[STNSSC1.FLIGHT.STNJEHCES.PDL]FOSDROP11.;4
  605   YFFEPFLG: INTEGER*2. EQUIVALENCED TO NARRAY(SMISC+TBD). MEMORY LOADED PRIOR !009
  606   ..TO EACH OBSERVATION. USED TO DETERMINE IF STATUS BUFFER MESSAGE 3028 IS   !009
  607   ..TO BE POSTED AND YOVCTR CLEARED WHEN OVERLITE RETURNS BELOW LIMIT.        !009
  608   ..INITIALIZED TO 1 (NEW POINTING).                                          !009
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File ST$NSSC:[STNSSC1.FLIGHT.TEST.PDL]FOSDROP11.;1
 569   YFFMSK: INTEGER*2. EQUIVALENCED TO NARRAY(SMISC+75). USED TO MASK FLAT FIELD
**********
**********
File ST$NSSC:[STNSSC1.FLIGHT.STNJEHCES.PDL]FOSDROP11.;4
 612   YFGIMPCB: INTEGER*4 ARRAY DIMENSIONED (9). FIRST ELEMENT EQUIVALENCED TO    !011
 613   ..NARRAY(SMISC+TBD). USED TO HOLD THE NEW SCALED GIMP POLYNOMIAL            !011
 614   ..COEFFICIENTS AND THE STARTING GIMP TICK VALUE FOR THE NEXT GIMP           !011
 615   ..CORRECTION PERIOD. USED BY PROCESSOR 30 (YFHKPG). THE TABLE IS ARRANGED   !011
 616   ..AS FOLLOWS:                                                              !011
 617   .. WORD 1 = X CORRECTION CUBIC COEFFICIENT * 2**24  (A3)                   !011
 618   ..      2 = X CORRECTION SQUARE COEFFICIENT * 2**16  (A2)                   !011
 619   ..      3 = X CORRECTION LINEAR COEFFICIENT * 2**12  (A1)                   !011
 620   ..      4 = X CORRECTION CONSTANT COEFFICIENT * 2**8  (A0)                  !011
 621   ..      5 = Y CORRECTION CUBIC COEFFICIENT * 2**24  (B3)                    !011
 622   ..      6 = Y CORRECTION SQUARE COEFFICIENT * 2**16  (B2)                   !011
 623   ..      7 = Y CORRECTION LINEAR COEFFICIENT * 2**12  (B1)                   !011
 624   ..      8 = Y CORRECTION CONSTANT COEFFICIENT * 2**8  (B0)                  !011
 625   ..      9 = "ZERO TIME" IN GIMP_TICKS FOR WHICH THE CORRECTION POLYNOMIALS  !011
 626   ..          WITH THESE NEW COEFFICIENTS SHOULD FIRST BE EVALUATED DURING    !011
 627   ..          THE NEXT CORRECTION CYCLE;  THIS ITEM MUST BE NONNEGATIVE       !011
 628   ..          AND SHALL NOMINALLY BE 0. THE ZERO TIME INDICATOR IS SET TO AN  !011
 629   ..          18 BIT 2'S COMPLEMENT -1 BY THE FLIGHT SOFTWARE WHEN THE BUFFER !011
 630   ..          HAS BEEN READ, SO IT ALSO ACTS AS A FLAG INDICATING WHEN NEW    !011
 631   ..          COEFFICIENTS HAVE BEEN LOADED.                                  !011
 632   YFGMPCBF: INTEGER*2. EQUIVALENCED TO YFGIMPCB(9). GIMP COEFFICIENTS FLAG.   !011
 633   ..USED BY PROCESSOR 30 (YFHKPG) TO DETERMINE IF A NEW SET OF GIMP           !011
 634   ..COEFFICIENTS HAS BEEN LOADED. SET BY OBSERVATION SEQUENCE.                !011
 635   YFGMPCMD: INTEGER*4 ARRAY DIMENSIONED (6). USED TO HOLD A COPY OF THE       !011
 636   ..FOLLOWING COMMANDS TO BE PUT INTO FOS UNIQUE SEQUENCE 3 WHEN A GIMP       !011
 637   ..CORRECTION IS NEEDED: /T50                                                !011
 638   ..                      /YXDGIMP/XXX    * GIMP X CORRECTION                 !011
 639   ..                      /T50                                                !011
 640   ..                      /YYDGIMP/XXX    * GIMP Y CORRECTION                 !011
 641   ..USED BY YFGIMP IN PROCESSOR 30 (YFHKPG).                                  !011
 642   YFGMPCMX: INTEGER*2. EQUIVALENCED TO NARRAY(SMISC+TBD). MAXIMUM X OR Y      !011
 643   ..CORRECTION WHICH MAY BE SENT TO THE FOS IN A YXDGIMP OR YYDGIMP COMMAND   !011
 644   ..(8 BIT, 2'S COMPLEMENT OUTPUT). USED BY PROCESSOR 30 (YFHKPG).            !011
 645   ..INITIALIZED TO 127.                                                       !011
 646   YFGMPCMN: INTEGER*2. EQUIVALENCED TO NARRAY(SMISC+TBD). MINIMUM X OR Y      !011
 647   ..CORRECTION WHICH MAY BE SENT TO THE FOS IN A YXDGIMP OR YYDGIMP COMMAND   !011
 648   ..(8 BIT, 2'S COMPLEMENT OUTPUT). USED BY PROCESSOR 30 (YFHKPG).            !011
 649   ..INITIALIZED TO -128.                                                      !011
 650   YFGIMPCO: INTEGER*4 ARRAY DIMENSIONED (8). FIRST ELEMENT EQUIVALENCED TO    !011
 651   ..NARRAY(SMISC+TBD). USED TO HOLD THE X AND Y DEFLECTION CORRECTION         !011
 652   ..COEFFICIENTS CURRENTLY BEING USED BY YFGIMP. IT IS LOADED BY YFGIMP FROM  !011
 653   ..ARRAY YFGIMPCB. USED BY PROCESSOR 30 (YFHKPG). THE TABLE IS ARRANGED AS   !011
 654   ..FOLLOWS:                                                                  !011
 655   .. WORD 1 = X CORRECTION CUBIC COEFFICIENT * 2**24  (A3)                    !011
 656   ..      2 = X CORRECTION SQUARE COEFFICIENT * 2**16  (A2)                    !011
 657   ..      3 = X CORRECTION LINEAR COEFFICIENT * 2**12  (A1)                    !011
 658   ..      4 = X CORRECTION CONSTANT COEFFICIENT * 2**8  (A0)                   !011
 659   ..      5 = Y CORRECTION CUBIC COEFFICIENT * 2**24  (B3)                     !011
 660   ..      6 = Y CORRECTION SQUARE COEFFICIENT * 2**16  (B2)                    !011
 661   ..      7 = Y CORRECTION LINEAR COEFFICIENT * 2**12  (B1)                    !011
 662   ..      8 = Y CORRECTION CONSTANT COEFFICIENT * 2**8  (B0)                   !011
 663   YFGMPDMX: INTEGER*2. EQUIVALENCED TO NARRAY(SMISC+TBD). MAXIMUM NUMBER OF   !011
 664   ..GIMP_TICKS FOR WHICH GIMP POLYNOMIALS ARE VALID. USED BY PROCESSOR 30     !011
 665   ..(YFHKPG). INITIALIZED TO 120 (30 MINUTES).                                !011
 666   YFGMPDMN: INTEGER*2. EQUIVALENCED TO NARRAY(SMISC+TBD). MINIMUM NUMBER OF   !011
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668   ..(YFHKPG). INITIALIZED TO 0 (0 SECONDS).                                    !011
669   YFGMPINT: INTEGER*2. EQUIVALENCED TO NARRAY(SMISC+TBD). INTERVAL IN GIMP     !011
670   ..TICKS BETWEEN CORRECTION CYCLES. USED BY PROCESSOR 30 (YFHKPG).            !011
671   .. INITIALIZED TO 2.                                                         !011
672   YFGNUMPC: INTEGER*2. EQUIVALENCED TO NARRAY(SMISC+TBD). THE NUMBER OF        !011
673   ..COEFFICIENTS IN EACH OF THE X AND Y CORRECTION POLYNOMIALS (POLYNOMIAL     !011
674   ..ORDER + 1). USED BY PROCESSOR 30 (YFHKPG). INITIALIZED TO 4.               !011
675   YFGSCALE: INTEGER*2 ARRAY DIMENSIONED (5). FIRST ELEMENT EQUIVALENCED TO     !011
676   ..NARRAY(SMISC+TBD). ARRAY CONTAINING BINARY SCALING ADJUSTMENTS TO BE       !011
677   ..APPLIED AT EACH STEP IN THE EVALUATION OF THE CORRECTION POLYNOMIALS AND   !011
678   ..TO THE RESULT; THE SCALE ADJUSTMENT REPRESENTS THE POWER OF 2 BY WHICH     !011
679   ..THE ITEM OF INTEREST IS TO BE MULTIPLIED. USED BY PROCESSOR 30 (YFHKPG).   !011
680   ..THE TABLE IS ARRANGED AND INITIALIZED AS FOLLOWS:                          !011
681   ..  WORD    INITIAL                                                          !011
682   ..(OFFSET)  VALUE    ID       DESCRIPTION                                    !011
683   ..   0        0     YFGSCCU  SCALE ADJUSTMENT APPLIED BEFORE CUBIC          !011
684   ..                           COEFFICIENT ADDED TO INTERMEDIATE HORNER SUM.  !011
685   ..   1       -8     YFGSCSQ  SCALE ADJUSTMENT APPLIED BEFORE SQUARE         !011
686   ..                           COEFFICIENT ADDED TO INTERMEDIATE HORNER SUM;  !011
687   ..                           EQUAL TO THE DIFFERENCE BETWEEN SCALES OF      !011
688   ..                           SQUARE AND CUBIC COEFFICIENTS.                 !011
689   ..   2       -4     YFGSCLN  SCALE ADJUSTMENT APPLIED BEFORE LINEAR         !011
690   ..                           COEFFICIENT ADDED TO INTERMEDIATE HORNER SUM;  !011
691   ..                           EQUAL TO THE DIFFERENCES BETWEEN SCALES OF     !011
692   ..                           LINEAR AND SQUARE COEFFICIENTS.                !011
693   ..   3       -4     YFGSCCO  SCALE ADJUSTMENT APPLIED BEFORE CONSTANT       !011
694   ..                           COEFFICIENT ADDED TO INTERMEDIATE HORNER SUM;  !011
695   ..                           EQUAL TO THE DIFFERENCE BETWEEN SCALES OF      !011
696   ..                           CONSTANT AND LINEAR COEFFICIENTS.              !011
697   ..   4       -8     YFGSCRE  SCALE ADJUSTMENT APPLIED TO RESULT OF X AND Y  !011
698   ..                           CORRECTION POLYNOMIAL EVALUATION; EQUAL TO THE !011
699   ..                           DIFFERENCE BETWEEN SCALES OF FINAL RESULT      !011
700   ..                           (LEAST SIG. BIT = 1 DEFLECTION STEP) AND       !011
701   ..                           CONSTANT COEFFICIENT.                          !011
702   YFGSCCO: INTEGER*2. EQUIVALENCED TO YFGSCALE(3). SCALE ADJUSTMENT APPLIED    !011
703   ..BEFORE CONSTANT COEFFICIENT IS ADDED TO INTERMEDIATE HORNER SUM; EQUAL     !011
704   ..TO THE DIFFERENCE BETWEEN SCALES OF CONSTANT AND LINEAR COEFFICIENTS.      !011
705   ..USED BY PROCESSOR 30 (YFHKPG). INITIALIZED TO -4.                          !011
706   YFGSCCU: INTEGER*2. EQUIVALENCED TO YFGSCALE(0). SCALE ADJUSTMENT APPLIED    !011
707   ..BEFORE CUBIC COEFFICIENT IS ADDED TO INTERMEDIATE HORNER SUM. USED BY      !011
708   ..PROCESSOR 30 (YFHKPG). INITIALIZED TO 0.                                   !011
709   YFGSCLN: INTEGER*2. EQUIVALENCED TO YFGSCALE(2). SCALE ADJUSTMENT APPLIED    !011
710   ..BEFORE LINEAR COEFFICIENT IS ADDED TO INTERMEDIATE HORNER SUM; EQUAL       !011
711   ..TO THE DIFFERENCE BETWEEN SCALES OF LINEAR AND SQUARE COEFFICIENTS. USED   !011
712   ..BY PROCESSOR 30 (YFHKPG). INITIALIZED TO -4.                               !011
713   YFGSCRE: INTEGER*2. EQUIVALENCED TO YFGSCALE(4). SCALE ADJUSTMENT APPLIED    !011
714   ..TO RESULT OF X AND Y CORRECTION POLYNOMIAL EVALUATION; EQUAL TO THE        !011
715   ..DIFFERENCE BETWEEN SCALES OF FINAL RESULT (LEAST SIG. BIT = 1 DEFLECTION   !011
716   ..STEP) AND CONSTANT COEFFICIENT. USED BY PROCESSOR 30 (YFHKPG).             !011
717   ..INITIALIZED TO -8.                                                         !011
718   YFGSCSQ: INTEGER*2. EQUIVALENCED TO YFGSCALE(1). SCALE ADJUSTMENT APPLIED    !011
719   ..BEFORE SQUARE COEFFICIENT IS ADDED TO INTERMEDIATE HORNER SUM; EQUAL       !011
720   ..TO THE DIFFERENCE BETWEEN SCALES OF SQUARE AND CUBIC COEFFICIENTS. USED    !011
721   ..BY PROCESSOR 30 (YFHKPG). INITIALIZED TO -8.                               !011
722   YFGXEVAL: INTEGER*2 ARRAY DIMENSIONED (2). FIRST ELEMENT EQUIVALENCED TO     !011
723   ..TO NARRAY(SMISC+TBD). TEMPORARY STORAGE USED IN DOUBLE PRECISION           !011
 24   ..CALCULATION OF X CORRECTION;  YFGXEVAL(1) CONTAINS THE LOW ORDER BITS      !011
725   ..AND YFGXEVAL(2) CONTAINS THE HIGH ORDER BITS. USED BY PROCESSOR 30         !011
726   ..(YFHKPG).                                                                  !011
727   YFGYEVAL: INTEGER*2 ARRAY DIMENSIONED (2). FIRST ELEMENT EQUIVALENCED TO     !011
728   ..TO NARRAY(SMISC+TBD). TEMP
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729   ..CALCULATION OF Y CORRECTION;  YFGYEVAL(1) CONTAINS THE LOW ORDER BITS     !011
730   ..AND YFGYEVAL(2) CONTAINS THE HIGH ORDER BITS. USED BY PROCESSOR 30        !011
731   ..(YFHKPG).                                                                !011
732   YFHKFL: INTEGER*2. EQUIVALENCED TO NARRAY(SMISC+32). TEST OPERAND FOR CASE
******
File ST$NSSC:[STNSSC1.FLIGHT.TEST.PDL]FOSDROP11.;1
572   YFHKFL: INTEGER*2. EQUIVALENCED TO NARRAY(SMISC+32). TEST OPERAND FOR CASE
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**********
File ST$NSSC:[STNSSC1.FLIGHT.STNJEHCES.PDL]FOSDROP11.;4
754   YFOFCT: INTEGER*2. EQUIVALENCED TO NARRAY(SMISC+21). RANGE 0-2. NUMBER OF EXECU-
******
File ST$NSSC:[STNSSC1.FLIGHT.TEST.PDL]FOSDROP11.;1
594   YFNPFLG: INTEGER*2. EQUIVALENCED TO NARRAY(SMISC+TBD). MEMORY LOADED PRIOR  !009
595   ..TO EACH OBSERVATION. USED TO DETERMINE IF STATUS BUFFER MESSAGE 3028 IS   !009
596   ..TO BE POSTED AND YOVCTR CLEARED WHEN OVERLITE RETURNS BELOW LIMIT.        !009
597   ..INITIALIZED TO 1 (NEW POINTING).                                         !009
598   YFOFCT: INTEGER*2. EQUIVALENCED TO NARRAY(SMISC+21). RANGE 0-2. NUMBER OF EXECU-
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File ST$NSSC:[STNSSC1.FLIGHT.STNJEHCES.PDL]FOSDROP11.;4
2284  ..MODIFIED : 08-JAN-92 ADD GIMP CORRECTION SUBROUTINE. PTR STP-G 1517. 002
2285  ..AUTHORS = GERALD PETERS, GLENN FOLEY                                     !002
2286       THE HOUSEKEEPING PROCESSOR IS DESIGNED TO MONITOR AND PROTECT THE
2287  HEALTH AND SAFETY OF THE FOS WHENEVER THE NSSC-1 IS OPERATING NORMALLY,
2288  WHETHER OR NOT THE FOS CEA IS POWERED ON. IN ADDITION, THE HOUSEKEEPING     !002
2289  PROCESSOR CALCULATES DEFLECTION CORRECTIONS FOR THE GEOMAGNETICALLY-INDUCED !002
2290  IMAGE MOTION PROBLEM (GIMP). WHEN THE CEA IS OFF, THE ONLY FUNCTIONS       !002
2291  PERFORMED BY HOUSEKEEPING ARE TESTING LIMIT CHECK RESULTS AND FAIL-SAFE    !002
2292  RPI'S. IMMEDIATELY AFTER NSSC-1 INITIALIZATION, FOS LIMIT CHECKING SHOULD BE RE-
****
File ST$NSSC:[STNSSC1.FLIGHT.TEST.PDL]FOSDROP11.;1
2128  ..AUTHOR = GERALD PETERS
2129       THE HOUSEKEEPING PROCESSOR IS DESIGNED TO MONITOR AND PROTECT THE
2130  HEALTH AND SAFETY OF THE FOS WHENEVER THE NSSC-1 IS OPERATING NORMALLY,
2131  WHETHER OR NOT THE FOS CEA IS POWERED ON. WHEN THE CEA IS OFF, THE ONLY FUNC-
2132  TIONS PERFORMED BY HOUSEKEEPING ARE TESTING LIMIT CHECK RESULTS AND FAIL-SAFE
2133  RPI'S. IMMEDIATELY AFTER NSSC-1 INITIALIZATION, FOS LIMIT CHECKING SHOULD BE RE-
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File ST$NSSC:[STNSSC1.FLIGHT.STNJEHCES.PDL]FOSDROP11.;4
2304  THE FOS RESET MICROPROCESSOR BIT AND THE FOS KEEP-ALIVE RESPONSE. IN        !002
2305  ADDITION, PART 1 CALLS THE GIMP CORRECTION SUBROUTINE WHEN THE FOS IS ON.   !002
2306  PART 1 CAN INVOKE YFOFF (PROCESSOR 27) OR FOS PSS. PART 1 CAN RESULT    !002!001
2307  IN STATUS BUFFER MESSAGES.
******
File ST$NSSC:[STNSSC1.FLIGHT.TEST.PDL]FOSDROP11.;1
2145  THE FOS RESET MICROPROCESSOR BIT AND THE FOS KEEP-ALIVE RESPONSE. PART 1
2146  CAN INVOKE YFOFF (PROCESSOR 27) OR FOS PSS. PART 1 CAN RESULT              !001
2147  IN STATUS BUFFER MESSAGES.
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File ST$NSSC:[STNSSC1.FLIGHT.STNJEHCES.PDL]FOSDROP11.;4
2313  TESTS THE FOS DISCRETE COMMAND LOG AND CALLS THE GIMP CORRECTION           !002
2314  SUBROUTINE. PART 3 CAN RESULT IN STATUS BUFFER MESSAGES.                   !002
2315       PART 4 TESTS FOR ARMED FAIL-SAFE DEVICES, AND, IF ANY ARE FOUND, ACTIVATES
****
File ST$NSSC:[STNSSC1.FLIGHT.TEST.PDL]FOSDROP11.;1
2153  AND TESTS THE FOS DISCRETE COMMAND LOG. PART 3 CAN RESULT IN STATUS BUFFER
2154  MESSAGES.
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File ST$NSSC:[STNSSC1.FLIGHT.STNJEHCES.PDL]FOSDROP11.;4
 2321        WHEN ENABLED, THE GIMP CORRECTION SUBROUTINE COMPUTES DETECTOR          !002
 2322   DEFLECTION CORRECTION VALUES ACCORDING TO A THIRD ORDER TIME POLYNOMIAL.     !002
 2323   THE POLYNOMIAL COEFFICIENTS ARE LOADED FROM GROUND TO COVER A SPECIFIED      !002
 2324   OBSERVATION PERIOD. AT THE END OF THE PERIOD THE SUBROUTINE DISABLES ITSELF !002
 2325   IF A NEW SET OF COEFFICIENTS HAS NOT YET BEEN LOADED.                       !002
 2326        HOUSEKEEPING REQUIRES THE PRESENCE OF CMD SEQS 29, 30, AND FOS UNIQUE  !002
 2327   SEQUENCE 3. HOUSEKEEPING IS PROCESSOR 30 (YFHKPG). CERTAIN PARAMETERS       !002
 2328   (DESCRIBED IN MODULE YFHKPG COMMENTS) MAY REQUIRE LOADING VIA COMMAND FROM  !002
 2329   TIME TO TIME.                                                               !002
 2330   %D DATA ELEMENTS FOR THE HOUSEKEEPING PROCESSOR
******
File ST$NSSC:[STNSSC1.FLIGHT.TEST.PDL]FOSDROP11.;1
 2161        HOUSEKEEPING REQUIRES THE PRESENCE OF CMD SEQS 29 AND 30. HOUSEKEEPING
 2162   IS PROCESSOR 30 (YFHKPG). CERTAIN PARAMETERS (DESCRIBED IN MODULE YFHKPG
 2163   COMMENTS) MAY REQUIRE LOADING VIA COMMAND FROM TIME TO TIME.
 2164   %D DATA ELEMENTS FOR THE HOUSEKEEPING PROCESSOR
********
************
File ST$NSSC:[STNSSC1.FLIGHT.STNJEHCES.PDL]FOSDROP11.;4
 2336   ..ADD GIMP CORRECTION SUBROUTINE. 10-JAN-92,  PTR STP-G 1517. 002
 2337   ..DEFINES DATA ELEMENTS USED IN FOS HOUSEKEEPING PROCESSOR (30)
******
File ST$NSSC:[STNSSC1.FLIGHT.TEST.PDL]FOSDROP11.;1
 2170   ..DEFINES DATA ELEMENTS USED IN FOS HOUSEKEEPING PROCESSOR (30)
************
************
File ST$NSSC:[STNSSC1.FLIGHT.STNJEHCES.PDL]FOSDROP11.;4
 2348   YGRET: INTEGER*2. RETURN CODE FROM THE IBM UTILITIES. =0, SUCCESSFUL.       !002
 2349   YLOOP: INTEGER*2. LOOP COUNTER FOR SUBROUTINE YFGIMP.                       !002
 2350   YNRET: INTEGER*2. RETURN CODE FROM THE IBM UTILITIES. =0, SUCCESSFUL.
******
File ST$NSSC:[STNSSC1.FLIGHT.TEST.PDL]FOSDROP11.;1
 2181   YNRET: INTEGER*2. RETURN CODE FROM THE IBM UTILITIES. =0, SUCCESSFUL.
************
************
File ST$NSSC:[STNSSC1.FLIGHT.STNJEHCES.PDL]FOSDROP11.;4
 2406   .. MODIFIED 08-JAN-92:  ADD GIMP CORRECTION SUBROUTINE. PTR STP-G 1517. 004
 2407   ..BEGIN FORTRAN-LIKE STATEMENTS
******
File ST$NSSC:[STNSSC1.FLIGHT.TEST.PDL]FOSDROP11.;1
 2237   ..BEGIN FORTRAN-LIKE STATEMENTS
************
************
File ST$NSSC:[STNSSC1.FLIGHT.STNJEHCES.PDL]FOSDROP11.;4
 2452   ..PERFORM GIMP CORRECTIONS                                                  !004
 2453   GIMP CORRECTIONS
 2454   YFGIMP                                                                      !004
 2455   PART(2):
******
File ST$NSSC:[STNSSC1.FLIGHT.TEST.PDL]FOSDROP11.;1
 2282   PART(2):
************
************
File ST$NSSC:[STNSSC1.FLIGHT.STNJEHCES.PDL]FOSDROP11.;4
 2461   ..PERFORM GIMP CORRECTIONS                                                  !004
 2462   GIMP CORRECTIONS
 2463   YFGIMP                                                                      !004
```

```
****
File ST$NSSC:[STNSSC1.FLIGHT.TEST.PDL]FOSDROP11.;1
 2288   PART(4):
************
 ***********
 ile ST$NSSC:[STNSSC1.FLIGHT.STNJEHCES.PDL]FOSDROP11.;4
 2486   ..MOD = 01/13/92  SAFE FOS AFTER TWO CONSECUTIVE LIMIT VIOLATIONS.
 2487   ..                PTR STP-G 1532. 003
 2488   ..ENGLISH NAME = HOUSEKEEPING CASE 1
******
File ST$NSSC:[STNSSC1.FLIGHT.TEST.PDL]FOSDROP11.;1
 2310   ..ENGLISH NAME = HOUSEKEEPING CASE 1
************
************
File ST$NSSC:[STNSSC1.FLIGHT.STNJEHCES.PDL]FOSDROP11.;4
 2491   ..CALLS = YFHERR AND ZISAF.                                    !003!002
 2492   ..NOTES = YFHCS1 MAY INVOKE PSS.                               !003!001
 2493   .. = YFHCS1 MAY WRITE ONE OR MORE STATUS BUFFER MESSAGES
******
e ST$NSSC:[STNSSC1.FLIGHT.TEST.PDL]FOSDROP11.;1
 2313   ..CALLS = YFHERR, ZIPCTL AND ZISAF.                              !002
 2314   ..NOTES = YFHCS1 MAY INVOKE PSS OR PROCESSOR 27 (TURN OFF).      !001
 2315   .. = YFHCS1 MAY WRITE ONE OR MORE STATUS BUFFER MESSAGES
************
************
File ST$NSSC:[STNSSC1.FLIGHT.STNJEHCES.PDL]FOSDROP11.;4
 2517   ..INVOKE FOS PSS                                               !003
 2518   ZISAF (2)                                                      !003
 2519   ENDIF
******
  le ST$NSSC:[STNSSC1.FLIGHT.TEST.PDL]FOSDROP11.;1
 2339   ..ENGR DATA INDICATES FOS SHOULD BE TURNED OFF. TEST TO SEE IF
 2340   ..ALREADY IN PROGRESS.
 2341   IF ((YTOFLG .NE. 1) .AND. ((YRIUAS .AND. LSQSMK) .EQ. 0))
 2342   YTOFLG = 1
 2343   ..INVOKE TURN OFF PROCESSOR
 2344   ZIPCTL (27, "65, YNRET)
 2345   ENDIF
 2346   ENDIF
************
************
File ST$NSSC:[STNSSC1.FLIGHT.STNJEHCES.PDL]FOSDROP11.;4
 2746   INTEGER*2 YOVERR, YSCERR, YFFEPFLG !001
 2747   INTEGER*4 YOVRHI, YOVRLO
******
File ST$NSSC:[STNSSC1.FLIGHT.TEST.PDL]FOSDROP11.;1
 2573   INTEGER*2 YOVERR, YSCERR, YFNPFLG ! 001
 2574   INTEGER*4 YOVRHI, YOVRLO
************
************
File ST$NSSC:[STNSSC1.FLIGHT.STNJEHCES.PDL]FOSDROP11.;4
 2781   ..COPY CLOSE ENTRANCE PORT COMMAND AND NO-OP COMMAND TO UNIQUE SEQUENCE 3   !001
 2782   ..USE ADDRESS YUNCD3 IN THE FLT SYSTEM FOR INDEX                            !001
 2783   INDEX = NSCTS + NSRTCI(1,3)                                                 !001
 2784   DO FOR I = 0,5                                                              !001
 2785   NARRY(INDEX+I) = YFCLDCMD(I)                                                !001
 2786   ENDDO                                                                       !001
 2787   ..ACTIVATE UNIQUE RTCS 3 TO CLOSE APERTURE DOOR                             !001
 2788   ZIRTCC (3, "01, 2, 2, YNRET, 30)                                            !001
 2789   ERROR HANDLER
```

```
File ST$NSSC:[STNSSC1.FLIGHT.TEST.PDL]FOSDROP11.;1
 2608   ..ACTIVATE UNIQUE RTCS 3 TO CLOSE APERTURE DOOR ! 001
 2609   ZIRTCC (3, "01, 2, 2, YNRET, 30) ! 001
 2610   ERROR HANDLER
**********
 **********
File ST$NSSC:[STNSSC1.FLIGHT.STNJEHCES.PDL]FOSDROP11.;4
 2804   IF ((YFFEPFLG) .NE. 0) ! 001
 2805   ERROR HANDLER
******
File ST$NSSC:[STNSSC1.FLIGHT.TEST.PDL]FOSDROP11.;1
 2625   IF ((YFNPFLG) .NE. 0) ! 001
 2626   ERROR HANDLER
**********
**********
File ST$NSSC:[STNSSC1.FLIGHT.STNJEHCES.PDL]FOSDROP11.;4
 3036   %S GIMP CORRECTIONS
 3037   ..MODULE NAME = YFGIMP
 3038   ..IDENTIFICATION = V1.00
 3039   ..DATE = 01/10/92
 3040   ..ENGLISH NAME = HOUSEKEEPING GIMP CORRECTIONS
 3041   ..LANGUAGE = CAINE, FARBER & GORDON PDL
 3042   ..PURPOSE = TO PROVIDE DETECTOR DEFLECTION CORRECTIONS DURING ACQUISITIONS
 3043   ..          IN ORDER TO COMPENSATE FOR GEOMAGNETICALLY INDUCED MOTION PROBLEM
 3044   ..          (GIMP).
 3045   ..CALLS = YFHERR AND ZIRTCC
 3046   ..NOTES = YFGIMP IS CALLED BY YFHCS1 AT MINOR FRAME 36 AND BY YFHCS3 AT MINOR
 3047   ..        FRAME 66 AS PART OF THE HOUSEKEEPING PROCESSOR (YFHKPG).
 3048   ..        YFGIMP MAY RESULT IN ONE OR MORE STATUS BUFFER MESSAGES.
 3049   ..
 3050   ..        THE PDL VERSION OF THE SUBROUTINE WAS DERRIVED FROM THE FOLLOWING
 3051   ..        DESCRIPTIVE DESIGN:
 3052   ..
 3053   ..IF (GIMP_FCT_ENA .EQ. 1) THEN    . IS GIMP FUNCTION ENABLED?
 3054   ..   IF (GIMP_COEFF_BUFFER(9) .GE. 0) THEN    . A NEW TABLE OF COEFFICIENTS HAS
 3055   ..                                            . BEEN LOADED SINCE THE LAST
 3056   ..                                            . CORRECTION CYCLE
 3057   ..      GIMP_TICK_CTR = GIMP_COEFF_BUFFER(9)    . SAVE NEW "ZERO TIME" RECEIVED
 3058   ..      DO LOOP = 1, 8    . COPY NEW COEFFICIENTS TO CURRENT COEFFICIENTS
 3059   ..         CURR_GIMP_COEFFS(LOOP) = GIMP_COEFF_BUFFER(LOOP)
 3060   ..      ENDDO
 3061   ..      GIMP_COEFF_BUFFER(9) = -1    . INDICATE BUFFER HAS BEEN UNLOADED
 3062   ..   ELSE
 3063   ..      GIMP_TICK_CTR = GIMP_TICK_CTR + GIMP_CORR_INT    . INCREMENT DOMAIN CTR.
 3064   ..   ENDIF
 3065   ..   IF ( (GIMP_TICK_CTR .GE. GIMP_DOMAIN_MIN) .AND.
 3066   ..      (GIMP_TICK_CTR .LE. GIMP_DOMAIN_MAX) ) THEN    . STILL IN TIME DOMAIN FOR
 3067   ..                                                     . WHICH CURRENT COEFFICIENTS VALID
 3068   ..      . EVALUATE X AND Y CORRECTION POLYNOMIALS USING HORNER'S METHOD
 3069   ..      X_EVAL = 0
 3070   ..      Y_EVAL = 0
 3071   ..      DO LOOP = 1, NUM_POLY_COEFFS
 3072   ..         X_EVAL = SHIFT(ROUND(X_EVAL * GIMP_TICK_CTR), SCALE_ADJUST(LOOP))
 3073   ..                  + CURR_GIMP_COEFFS(LOOP)
 3074   ..         Y_EVAL = SHIFT(ROUND(Y_EVAL * GIMP_TICK_CTR), SCALE_ADJUST(LOOP))
 3075   ..                  + CURR_GIMP_COEFFS(LOOP + NUM_POLY_COEFFS)
 3076   ..      ENDDO
 3077   ..      IF (ARITHMETIC_OVERFLOW .OR. SIGNIFICANT_BITS_IN_HIGH_ORDER_WORDS) THEN
 3078   ..        . NOTE:  OVERFLOW INDICATOR WILL LATCH IF SET DURING CALCULATION
```

delete

```
..      ELSE
..         X_GIMP_CORR =  SHIFT(ROUND(X_EVAL(1)), ADJ_RESULT)
..         Y_GIMP_CORR =  SHIFT(ROUND(Y_EVAL(1)), ADJ_RESULT)
..         IF ((X_GIMP_CORR .GE. GIMP_CORR_MIN) .AND.
..            (X_GIMP_CORR .LE. GIMP_CORR_MAX) .AND.
..            (Y_GIMP_CORR .GE. GIMP_CORR_MIN) .AND.
..            (Y_GIMP_CORR .LE. GIMP_CORR_MAX)) THEN
..            IF (GIMP_CORR_FLG .EQ. 1) THEN  . COMMANDING CORRECTIONS PERMITTED
..               BUILD_YXDGIMP_AND_YYDGIMP_COMMANDS
..               ACTIVATE_GIMP_RTCS
..               IF RTCS_ACTIVATION_ERROR THEN
..                  MAKE_ESB_ENTRY(MSG=GIMP_RTCS_ACTIVATION_ERROR,
..                     PARM=GIMP_TICK_CTR)
..                  GIMP_FCT_ENA = 0    . DISABLE GIMP CORRECTION FUNCTION
..               ENDIF
..            ENDIF
..         ELSE
..            MAKE_ESB_ENTRY(MSG=GIMP_CORRECTION_OUT_OF_BOUNDS,
..               PARM=GIMP_TICK_CTR)
..            GIMP_FCT_ENA = 0    . DISABLE GIMP CORRECTION FUNCTION
..         ENDIF
..      ENDIF
..   ELSE   . NEW COEFFICIENTS NOT LOADED IN TIME
..      MAKE_ESB_ENTRY(MSG=GIMP_COEFFICIENTS_EXPIRED, PARM=GIMP_TICK_CTR)
..      GIMP_FCT_ENA = 0    . DISABLE GIMP CORRECTION FUNCTION
..   ENDIF
..ENDIF
..
..  WHERE THE SYMBOLS HAVE BEEN DEFINED AS FLLOWS:
..
..  YFGIMPCB = GIMP_COEFF_BUFFER
..  YFGMPTIK = GIMP_TICK_CTR
..  YLOOP    = LOOP
..  YFGIMPCO = CURR_GIMP_COEFFS
..  YFGMPINT = GIMP_CORR_INT
..  YFGMPDMN = GIMP_DOMAIN_MIN
..  YFGMPDMX = GIMP_DOMAIN_MAX
..  YFGXEVAL = X_EVAL
..  YFGYEVAL = Y_EVAL
..  YFGNUMPC = NUM_POLY_COEFFS
..  YFGSCALE = SCALE_ADJUST
..  YFXGIMPC = X_GIMP_CORR
..  YFGSCRE  = ADJ_RESULT
..  YFYGIMPC = Y_GIMP_CORR
..  YFGMPCMN = GIMP_CORR_MIN
..  YFGMPCMX = GIMP_CORR_MAX
..  YFGMPCRE = GIMP_CORR_FLG
..  YFGIMPER = GIMP_ERROR_FLAG (IN CVT)
..  YFGMPERR = GIMP_ERROR_FLAG
..  YFGMPSTA = GIMP_STATUS (IN CVT)
..  YFGMPFCE = GIMP_FCT_ENA
..  YFGIMPEN = GIMP_CORR_FLG (IN CVT)
..
..AUTHORS = GLENN FOLEY, JOHN FITCH, JOHN HUEBER
..BEGIN FORTRAN-LIKE STATEMENTS
SUBROUTINE YFGIMP
..NON-EXECUTABLE STATEMENTS
..TYPE DECLARATIONS
INTEGER*2 YLOOP, YGRET
..PARAMETERS
```

```
3142  INCLUDE '[360,2]ZZNCOM.FTN/NOLIST'
3143  INCLUDE '[115,10]YSMISC.FTN/NOLIST'
3144  INCLUDE '[115,7]YHKLOC.FTN/NOLIST'
3145  ..BEGIN EXECUTABLE STATEMENTS
3146  ..IS GIMP FUNCTION ENABLED?
3147  IF (YFGMPFCE .EQ. 1)
3148  ..HAS A NEW TABLE OF COEFFICIENTS BEEN LOADED SINCE THE LAST
3149  ..CORRECTION CYCLE?
3150  ..NOTE THAT YFGMPCBF IS EQUAL TO YFGIMPCB(9), THE NEW COEFFICIENTS
3151  ..FLAG AS WELL AS THE NEW "ZERO TIME" FOR THE NEW COEFFICIENTS
3152  IF (YFGMPCBF .GE. 0)
3153  ..SAVE NEW "ZERO TIME" RECEIVED
3154  YFGMPTIK = YFGMPCBF
3155  ..COPY NEW COEFFICIENTS TO CURRENT COEFFICIENTS
3156  DO FOR YLOOP = 1, 8
3157  YFGIMPCO(YLOOP) = YFGIMPCB(YLOOP)
3158  ENDDO
3159  ..INDICATE BUFFER HAS BEEN UNLOADED
3160  YFGMPCBF = -1
3161  ELSE
3162  ..A NEW TABLE OF COEFFICIENTS HAS NOT BEEN LOADED
3163  ..CONTINUE WITH CURRENT TABLE COEFFICIENTS
3164  ..INCREMENT DOMAIN CTR.
3165  YFGMPTIK = YFGMPTIK + YFGMPINT
3166  ENDIF
3167  ..STILL IN TIME DOMAIN FOR WHICH CURRENT COEFFICIENTS VALID?
3168  IF ((YFGMPTIK .GE. YFGMPDMN) .AND. (YFGMPTIK .LE. YFGMPDMX))
3169  ..EVALUATE X AND Y CORRECTION POLYNOMIALS USING HORNER'S METHOD
3170  ..NOTE THAT YFGXEVAL AND YFGYEVAL ARE DOUBLE PRECISION WORDS
3171  YFGXEVAL = 0
3172  YFGYEVAL = 0
3173  DO FOR YLOOP = 1, YFGNUMPC
3174  YFGXEVAL = ISHFT (ROUND (YFGXEVAL * YFGMPTIK), YFGSCALE(YLOOP))
3175  YFGXEVAL = YFGXEVAL + YFGIMPCO(YLOOP)
3176  YFGYEVAL = ISHFT (ROUND (YFGYEVAL * YFGMPTIK), YFGSCALE(YLOOP))
3177  YFGYEVAL = YFGYEVAL + YFGIMPCO(YLOOP+YFGNUMPC)
3178  ENDDO
3179  IF (ARITHMETIC_OVERFLOW .OR. SIGNIFICANT_BITS_IN_HIGH_ORDER_WORDS)
3180  ..NOTE:  OVERFLOW INDICATOR WILL LATCH IF SET DURING CALCULATION
3181  ERROR HANDLER
3182  YFHERR (3060, YFGMPTIK)
3183  YFGMPERR = 1
3184  ELSE
3185  ..FINISH CORRECTION COMPUTATION
3186  ..NOTE THAT YFGXEVAL(1) AND YFGYEVAL(1) INDICATE LOW ORDER WORDS OF
3187  YFXGIMPC =  ISHFT (ROUND (YFGXEVAL(1)), YFGSCRE)
3188  YFYGIMPC =  ISHFT (ROUND (YFGYEVAL(1)), YFGSCRE)
3189  IF ((YFXGIMPC .GE. YFGMPCMN) .AND. (YFXGIMPC .LE. YFGMPCMX) .AND./
3190   (YFYGIMPC .GE. YFGMPCMN) .AND. (YFYGIMPC .LE. YFGMPCMX))
3191  IF (YFGMPCRE .EQ. 1)
3192  ..COMMANDING CORRECTIONS PERMITTED
3193  ..COPY GIMP CORRECTION COMMANDS TO UNIQUE SEQUENCE 3
3194  ..USE ADDRESS YUNCD3 IN THE FLT SYSTEM FOR INDEX
3195  INDEX = NSCTS + NSRTCI(1,3)
3196  DO FOR YLOOP = 0,5
3197  NARRY(INDEX+YLOOP) = YFGMPCMD(YLOOP)
3198  ENDDO
3199  ..BUILD YXDGIMP AND YYDGIMP COMMANDS
3200  ..NOTE THAT THE PARITY BIT (LSB) FOR EACH COMMAND MUST BE COMPUTED
3201  NARRAY(INDEX+2) = (NARRAY(INDEX+2) .AND. "177776"O) .OR. ISHFT (YFXGIMPC, 1)
```

initialize Gimp error flags

```
03   ..ACTIVATE GIMP RTCS (FOS UNIQUE SEQUENCE 3)
3204   ZIRTCC (3, "01, 2, 2, YGRET, 30)
3205   IF (YGRET .NE. 0)
3206   ..RTCS ACTIVATION ERROR
3207   ERROR HANDLER
3208   YFHERR (3061, YFGMPTIK)
3209   YFGMPERR = 1
3210   ENDIF
3211   ENDIF
3212   ELSE
3213   ..GIMP CORRECTIONS ARE OUT OF BOUNDS
3214   ERROR HANDLER
3215   YFHERR (3062, YFGMPTIK)
3216   YFGMPERR = 1
3217   ENDIF
3218   ENDIF
3219   ELSE
3220   ..NEW COEFFICIENTS NOT LOADED IN TIME
3221   ERROR HANDLER
3222   YFHERR (3063, YFGMPTIK)
3223   YFGMPERR = 1
3224   ENDIF
3225   IF (YFGMPERR .NE. 0)
3226   ..SET CVT ERROR FLAG
3227   YFGMPSTA = YFGMPSTA .OR. 1
3228   ..DISABLE GIMP CORRECTION FUNCTION
3229   YFGMPFCE = 0
3230   ENDIF
3231   ENDIF
3232   RETURN
3233   %T FOS-UNIQUE RELATIVE TIME CMD SEQ FOR GIMP CORRECTIONS AND SHUTTER CLOSING/
3234    (FOS SEQ 3)
3235   ..MODULE NAME = YUNCD3
3236   ..IDENTIFICATION = V1.00
3237   ..DATE = 01/13/92
3238   ..AUTHOR = GLENN FOLEY, JOHN HUEBER
3239   ..RELATIVE TIME COMMAND SEQUENCE FOR GIMP CORRECTION COMMANDS AND OVERLITE
3240   ..RESPONSE COMMAND (CLOSE SHUTTER).
3241   ..FOS SEQUENCE 3
3242   ..MODIFIED BY YFGIMP AND YFHC2A OF YFHKPG (PROCESSOR 30). WHEN YFGIMP
3243   ..MODIFIES THE SEQUENCE, THE FIRST TWO COMMANDS ARE SET TO GIMP X AND
3244   ..Y DEFLECTION COMMANDS. WHEN YFHC2A MODIFIES THE SEQUENCE, THE FIRST
3245   ..COMMAND IS SET TO /YENTRNC/2 (CLOSE APERTURE DOOR) AND THE SECOND
3246   ..COMMAND IS SET TO /MNOPRATE.
3247   ..REQUIRES WRITE ACCESS
3248   /MAXTSIZE/100  * TABLE SIZE IN 16-BIT WORDS
3249   /MRELTIMS/3/2  * FOS SEQUENCE 3
3250   *
3251   * COMMAND IS EITHER YXDGIMP/XXX (GIMP X DEFLECTION) OR /YENTRNC/2
3252   * (SHUTTER CLOSE)
3253   *
3254   /T50
3255   YUNCD3:/XXXXXXXX
3256   *
3257   * COMMAND IS EITHER YYDGIMP/XXX (GIMP Y DEFLECTION) OR MNOPRATE (NO-OP)
3258   *
  59   /T50
3260   /XXXXXXXX/XXXX
3261   /T50
3262   /MNOPRATE
3263   (MTABLEWR
```

```
 3264   %T RELATIVE TIME COMMAND SEQUENCE FOR FOS KEEP-ALIVE (YF29CD)
******
File ST$NSSC:[STNSSC1.FLIGHT.TEST.PDL]FOSDROP11.;1
 2857   %T RELATIVE TIME COMMAND SEQUENCE FOR FOS KEEP-ALIVE (YF29CD)
************

Number of difference sections found: 28
Number of difference records found: 450

DIFFERENCES /IGNORE=()/MERGED=1/OUTPUT=ST$NSSC:[STNSSC1.FLIGHT.STNJEHCES.PDL]FOSDROP11.DIF;1-
    ST$NSSC:[STNSSC1.FLIGHT.STNJEHCES.PDL]FOSDROP11.;4-
    ST$NSSC:[STNSSC1.FLIGHT.TEST.PDL]FOSDROP11.;1
```

From: STSCIC::FITCH 19-MAR-1992 11:46:45.76
To: BALZANO,CHANCE
CC:
Subj: Rick's reply!!!

From: CASS::RICK 19-MAR-1992 11:41:59.61
To: STSCIC::FITCH,RICK
CC:
Subj: GIMP fix fix

John --

I've finally had a chance to look at those YKEY commands for the GIMP fix (amazingly enough, right now I'm somewhere in the air on the way to Indianapolis, and will probably modem this from my hotel room there, back to UCSD, for netting to the Institute -- isn't modern technology wonderful). Anyway, looking at the ASCII characters (I haven't checked the ASCII equivalents) shown in the comment lines (; * YKEY ':', etc.), everything looks OK except for seven missing SPACEs. The seven additional SPACEs should be placed:

1. After the leading ':' (after the very first command);
2. Between the first ';' and the ''' (after the current 24th command);
3. Between the ''' and the 'X' (after the current 25th command);
4. Between the first '!' and the second ':' (after the current 35th command);
5. Between the second ':' and the 'Y' (after the current 36th command);
6. Between the second ';' and the ''' (after the current 59th command);
7. Between the ''' and the 'Y' (after the current 60th command).

(8.) (Just in case you are wondering, it doesn't require another SPACE (delimiter) following the '!' at the end, prior to the 'CR').

I think this should take care of it, making a total of 78 YKEY commands in all. Let me know what else I can do.

Rick