Comments on Fix of Anomaly L-1C-Ol in Luminary 163

References: (a) Revision 163 of AGC Program Luminary, dated 29 April 1970, received 18 May 1970.

(b) Luminary Anomaly Report L-1C-O1, dated 5 November 1969.

Continued review of reference (a) has revealed that the "fix" of anomaly L-1C-Ol (reference (b)) has created the possibility of an erroneous program transfer in the event that a restart is encountered. This possibility would appear to be more serious than the difficulty fixed by the change, namely an extra change to \underline{v}_{C} , again if a restart encountered.

The difficulty arises because of the fact that "S40.8", even though it is entered from only one place in the program, is treated as a subroutine, and therefore its return address when the routine is entered is contained in the last cell of the assigned VAC area (QPRET). As is well known at MSC, restarts do not retain VAC area allocations. Consequently, the program in the event of a restart would transfer to QPRET information that <u>might</u> be correct, if the same VAC area is assigned after the restart as was assigned before the restart. On the other hand, of course, the QPRET could be erroneous.

The required fix, of course, is to save QPRET in an unique erasable memory cell when the routine is entered. This is done in the "S40.8" routine in the CSM. "S40.8" is used in P40, P41, and P42.

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