Here is a spot, concocted partly in response to Craig A Pearce's letter ["Snob Detector," page 53], for examples of creative uses of programmable calculator products. We start this off with SHOOTING STARS, expressed in the form of a program for the SR-52 calculator by Texas Instruments, with the PC-100 printer attachment.

Desk Top Wonders

SHOOTING STARS
(for the SR-52 and PC-100 Printer)

by

Craig A Pearce
2529 S Home Av
Berwyn IL 60402

Instructions:

Note: Before recording program card 2 (play section) onto a magnetic card, perform the following steps:
A. Input the number 222212222
B. Press: STO, 9, 7
C. Record in the usual manner

1. Input initialization card (card #1) and press C.
2. Printer will show the 9 star positions by their number on the thermal paper strip. The LED display shows the same positions in an in-line fashion.
3. Load in the play card (card 2) – both A & B sides.
4. For a new game, press: E
5. Printer will show the star field at the start of the game:
   1 1 1
   1 2 1
   1 1 1
6. Each 1 represents a black hole. Each 2 represents a star.
7. Following standard rules of play (shooting stars only) the user inputs the star position to be shot and keys:
   RUN
   for each move of the game. The star field is reprinted with the stars affected by the shot having been modified (stars become black holes and vice versa). The object is to end up with a star field as follows:
   2 2 2
   2 1 2
   2 2 2
8. When the game is completed correctly, the number of turns used in the game will be displayed just below the final grid pattern as a negative number. This number can be recalled at any time by pressing: RCL 10
9. If no moves are possible, (all positions are filled with black holes), the game has been lost. Shooting a black hole causes the display to blink and the PC-100 to print: 0. ?
   Before continuing, press CE to stop blinking.
10. To begin a new game, go to line 4 above.

Program Listings

(Initialization Card):

```
000  *LBL C        002  .1245        007  STO 11
010  .123          014  STO 12       017  .2356
022  STO 13        025  .147         029  STO 14
032  .24568        038  STO 15       041  .369
045  STO 16        048  .4578        053  STO 17
056  .789          060  STO 18       063  .5689
068  STO 19        071  123 *prt     075  456 *prt
079  789 *prt      083  12345        088  6789
092  *pap *rtn
```

(Game Play Card):

```
000  *LBL A HLT    003  *B' – 1 =     007  INV *ifzro 018
012  + = *prt *pap 016  GTO A         018  1 SUM 10
022  RCL 98        025  + 10 =        029  *B' STO 99
033  10 *PROD 99   038  RCL 99 –      042  1 EE 12 +
047  1 EE 12 =     052  INV EE        054  *ifzro 105
058  INV SUM 99    062  *B' – 1 =     066  *ifzro 072
070  2 ÷           072  2 =           074  *IND STO 98
078  GTO 033       082  *LBL E        084  0 STO 10
088  9 STO 00 1    093  *IND STO 00   097  *dsz 093
101  2 STO 05      105  0 STO 99      109  1 STO 98
113  3 STO 00      117  1000 *PROD 99 124  *IND RCL 98
128  x ( RCL 00 –  134  1 ) INV *log  138  = +
140  1 SUM 98      144  *dsz 124      148  0 = *prt
151  SUM 99        154  RCL 98 – 10 = 161  INV *ifzro 113
166  RCL 97 –      170  RCL 99 =      174  INV *ifzro 184
179  RCL 10 +/– *prt 184 *pap RCL 99 188  GTO A
190  *LBL *B'      192  STO 98        195  *IND RCL 98 *rtn
```

How Shooting a Star Affects Its Neighbors

All affected neighbors will change from stars to black holes and vice versa when a star is shot.

Patterns are shown below.

```
1 # *    # 2 #    * # 3
# # *    * * *    * # #
* * *    * * *    * * *

# * *    * # *    * * #
4 * *    # 5 #    * * 6
# * *    * # *    * * #

* * *    * * *    * * *
# # *    * * *    * # #
7 # *    # 8 #    * # 9
```

KEY:

* – unaffected position
\# – position that is affected
n – (where $1 \leqslant n \leqslant 9$) the star that was shot

Some Conventions Used in the Listings

* – denotes pressing on the 2nd key prior to the indicated one. Programs are read left to right, across all three columns before proceeding to the next line. The three digit number at the start of each column is the starting line number for the first of the instructions that follow it.

Warnings and Limitations

Shooting a black hole will cause a flashing display to indicate an error. Clear error condition by pressing CE before continuing.

No error checks have been added to detect illegal entries (<1 or >9 or noninteger inputs). User should avoid making these types of entries.

Program History

Originally submitted to the Hewlett-Packard software library, this program was printed in BASIC in Peoples' Computer Company's newsletter September 74, under the title TEASER.

Most recent printing was a machine code program (for the Intel 8008 chip) in the May 1976 issue of BYTE magazine by Willard I Nico.■