



## SELDON'S GAME

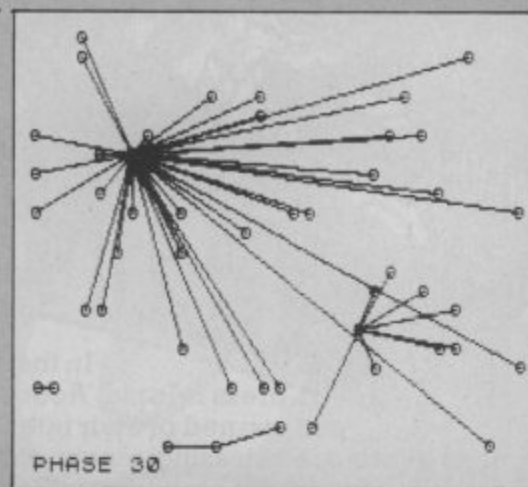
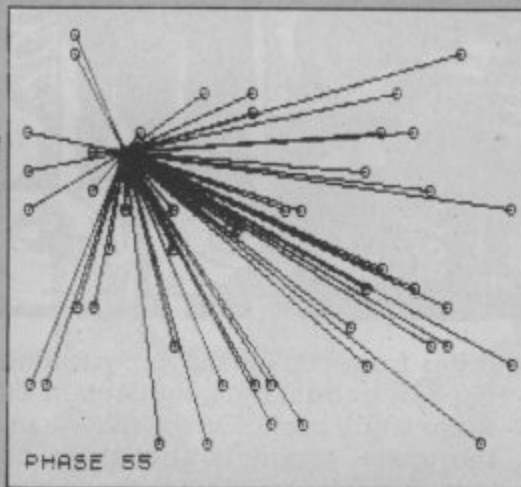
Asimov fans will no doubt have already guessed that *Seldon's Game* takes its theme from that author's Foundation trilogy, a series of books that plots the downfall of the Galactic Empire and the subsequent dark age of interstellar anarchy. The figure of Hari Seldon was crucial to the trilogy — the inventor of psychohistory, a sort of super-duper sociology which enabled him to mathematically predict the future course of galactic history and thus make plans to subtly influence it in the hope of shortening the ensuing dark age.

*Seldon's Game* is therefore rather an unusual one. You are not playing against an opponent — instead you find yourself matched against the forces of history.

The listing I've provided for the Spectrum is just the core of *Seldon's Game*. It enables a phase-by-phase reconstruction of the changes of power and influence in the galaxy. Each star system has five variables associated with it — power, strength, growth, centralization and ruler.

The object of the game is to make one star the ruler of all the other stars in the galaxy. Which star rules which is determined by the calculation of the influence one star has over another. The formula is a little complex, but understanding it is vital if you are going to change history! The influence of star A over star B equals the power of star A divided by the distance factor. The distance factor is the square of the distance between the two stars plus the Galactic Interaction Constant, q. All this really means is that a star's influence diminishes rapidly as distance increases. The galactic interaction constant is there to provide a smoothing effect — a small interaction constant will mean that distance has a dramatic effect and changes in ruler will be more localized. A large interaction constant means that distance is not as crucial and more wide-sweeping changes of power are possible.

The game, as it stands, has one vital element missing — star type. A star's type determines how its growth rate and centralization factor change phase by phase and it is by changing a star's type that you will be able to influence the near-inevitable course



of galactic history. In subsequent *5th Columns*, star types that you can add to your *Seldon's Game* will be listed.

To start with, I recommend a galaxy of 25 stars with an interaction constant of 10. One word of warning before you experiment — doubling the number of stars will cause the

processing time to quadruple!

Suggestions as to how *Seldon's Game* should develop will be very welcome. The game is designed to grow and I hope that a lot of that growth will be stimulated by *5th Column* readers. Enjoy your psychohistory!

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1 REM *****
2 REM
3 REM Seldon's Game
4 REM *****
5 GO TO 1000
6 REM
7 REM Generate random number
8 REM within limits ll and hl
9 REM
10 LET ra=RND
11 LET ra=ll+(hl-ll)*ra
12 RETURN
13 REM
14 REM Clear screen
15 REM
16 CLS
17 RETURN
18 REM
19 REM Distance squared
20 REM
21 LET xd=x(s1)-x(s2)
22 LET yd=y(s1)-y(s2)
23 LET d2=xd*xd+yd*yd
24 RETURN
25 REM *****
26 REM PROCESS NEXT PHASE
27 REM *****
28 REM Calculate strength
29 REM
30 FOR n=1 TO ns
31 LET s(n)=s(n)+g(n)
32 NEXT n
33 REM
34 REM Calculate power
35 REM
36 FOR n=1 TO ns
37 LET p(n)=0
38 NEXT n
39 FOR n=1 TO ns
40 FOR m=1 TO ns
41 LET j=p(m)/d(n,m)
42 IF j>i THEN LET i=j: LET r(n)=m
43 NEXT m
44 NEXT n
45 RETURN
46 REM *****
47 REM Initialize Game
48 REM *****
49 GO SUB 60
50 PRINT "SELDON'S GAME"
51 PRINT
52 INPUT "How many stars ? "
53 ns
54 INPUT "What interaction ? "
55 q
56 REM
57 REM Set x,y limits
58 REM
59 LET lx=0: LET hx=32
60 LET ly=0: LET hy=32
61 REM
62 REM Set growth limits
63 REM
64 LET lg=0.9: LET hg=1.5
65 REM
66 REM Set centralize limits
67 REM
68 LET lc=0: LET hc=.75
69 REM
70 REM Set strength limits
71 REM
72 LET ls=1: LET hs=100
73 REM
74 REM Star Arrays
75 REM
76 DIM c(ns): REM centralization
77 DIM g(ns): REM growth
78 DIM p(ns): REM power
79 DIM r(ns): REM ruler
80 DIM s(ns): REM strength
81 DIM x(ns): REM x-coord
82 DIM y(ns): REM y-coord
83 DIM d(ns,ns): REM distance factor
84 REM
85 REM Random set-up
86 REM
87 FOR n=1 TO ns
88 LET ll=lg: LET hl=hg: GO SUB 10
89 LET g(n)=ra
90 LET ll=lc: LET hl=hc: GO SUB 10
91 LET c(n)=ra
92 LET ll=ls: LET hl=hs: GO SUB 10
93 LET s(n)=ra
94 LET r(n)=n
95 LET ll=lx: LET hl=hx: GO SUB 10
96 LET x(n)=INT(ra)
97 LET ll=ly: LET hl=hy: GO SUB 10
98 LET y(n)=INT(ra)
99 NEXT n
100 FOR n=1 TO ns
101 FOR m=1 TO ns
102 LET x(n)=x(n)-x(m)
103 LET y(n)=y(n)-y(m)
104 LET d(n,m)=x*x+y*y+q
105 NEXT m
106 NEXT n
107 LET ph=1
108 GO SUB 200
109 REM
110 REM Draw Results
111 REM
112 PAPER 0: INK 4: BORDER 0: C
113 REM
114 FOR n=1 TO ns
115 PRINT AT y(n),x(n):"o"
116 NEXT n
117 FOR n=1 TO ns
118 LET m=r(n): IF m=n THEN GO TO 2000
119 PLOT 3*x(n)+8,171-y(n)+8
120 DRAW 8*(x(m)-x(n)),8*(y(n)-y(m))
121 NEXT n
122 PRINT #0;"PHASE ";ph
123 REM *****
124 REM Run game
125 REM *****
126 LET ph=ph+1
127 GO SUB 200
128 GO TO 2000

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