

Edsac program for sieve of Eratosthenes

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Working space

1023 11111...111 1022 sieve represent odd numbers from 3

1021 11111...111 1020 sieve shown in LongTank 31

...

993 11111...111 992

991 10000...000 990 positive strobe used to test sieve

989 01000...000 988

...

923 00000...001 922

921 01111...111 920 negative strove used to reset sieve

919 10111...111 918

...

853 11111...110 852

T56K

[P6]

GKA3FT25@H29@VFT4DA3@TFH30@S6@T1F

V4DU4DAFG26@TFTFO5FA4DF4FS4F

L4FT4DA1FS3@G9@EFFSFO31@E20@J995FJF!F

T 834 K

834 | & F | lf

835 | @ F | cr

836 | # F | fig shift

837 | C1024 D |

838 | H 992 D |

839 | P 4 F |

840 | H 922 D |

841 | (P 6 F) | counter (4 x current prime number)

842 | P 70 F |

843 | L F |

844 | P D |

845 | P F |

846 | U 992 D |

847 | W 70 F |

848 | T1024 D |

849 | P 2 F |

850 | (P D) | strobe source

851 | (P F) | shifted 1 bit to the left each time

T 96 K

G K

7-> 0 | T F |

1 | S 850 D |

2 | (T 992 D) | store sieve

3 | A 2 @ | update `store sive order'

4 | A 849 F |

5 | U 2 @ |

6 | S 848 F |

7 | G @ | end of sieve preparation?

22-> 8 | T F |

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 9 | A1022 D |
10 | S 850 D |
11 | (T 852 D) | store negative strobe
12 | A 850 D |
13 | (U 922 D) | store positive strobe
14 | L D | shift left 1 bit
15 | T 850 D |
16 | A 11 @ | update `store strobe orders'
17 | A 849 F |
18 | U 11 @ |
19 | A 847 F |
20 | U 13 @ |
21 | S 846 F |
22 | G 8 @ | end of strobe preparation?
23 | O 836 F | fig shift
24 | O 835 F | cr
25 | O 834 F | lf
26 | T F |
27 | A 849 F |
28 | R D |
29 | T F | store 2
30 | A 30 @ |
31 | G 56 F | call P6, print the first prime 2
83,90-> | T F |
33 | (H 922 D) | load strobe into the multiplier register
34 | (C 992 D) | test sieve
35 | S 844 D |
36 | G 75 @ | jump to 75 if composite
37 | O 836 F | fig shift
38 | O 835 F | cr
39 | O 834 F | lf
40 | T F |
41 | A 841 F |
42 | R 1 F |
43 | T F | store next prime number
44 | A 44 @ |
45 | G 56 F | call P6, print the subsequent prime numbers
46 | T F |
47 | A 34 @ | plant `reset sieve orders'
48 | U 71 @ |
49 | S 843 F |
50 | T 72 @ |
51 | A 33 @ |
52 | S 842 F |
74->53 | A 841 F | update reset sieve orders
68->54 | U 70 @ |
55 | S 840 F | stepped out the sieve space?
56 | G 69 @ |
57 | T F |
58 | A 71 @ |
59 | A 849 F |
60 | U 71 @ |
61 | S 843 F |
62 | U 72 @ |
63 | S 848 F | end of sieve space?
64 | E 75 @ |

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65		T	F			
66		A	70 @			
67		S	842 F			
68		G	54 @			
		-----				
56->69		T	F			
70		(H	D)		reset sieve orders, load strobe into the multiplier register	
71		(C	D)		collate with sieve	
72		(T	D)		store sieve	
73		A	70 @			
74		G	53 @			
		-----				
36,64->		T	F			
76		A	841 F			
77		A	839 F		increase counter	
78		T	841 F			
79		A	33 @		update test sieve orders	
80		A	849 F			
81		U	33 @			
82		S	838 F			
83		G	32 @			
84		A	840 F			
85		T	33 @			
86		A	34 @			
87		A	849 F			
88		U	34 @			
89		S	837 F			
90		G	32 @			
91		Z	F		stop	
		E	96 K			
		P	F			