Singly-charged Helium ($^4He^+$) Phase Space densities from SWICS 1

Counts (C_k) and space phase densities in the spacecraft frame of reference (FW_k) are listed in 46 columns for 23 w-intervals as specified in the columns.

The averaging time interval of each row *k* is approximately 12 minutes.

The particle ($^4He^+$) speed, or normalized speed of the particle in km/s, V_{He+} = Solar- wind speed multiplied by w.

"0.000" and positive numbers are valid data, "-1" indicates missing data and should be ignored.

Two adjacent columns are used for each w-interval, the 1st lists counts and the 2nd the phase space density computed using the equation:

$$\text{Phase space density } [\text{sec}^3/\text{km}^6] = FW = \text{Counts/eff} * 1/(\text{epq})^2 * 378.4*(M/Q)^2$$

where

eff *is the efficiency of SWICS at each step–interval,*
epq *is the energy per charge at the center of the step interval,*
M/Q *is the mass/charge of the measured particle and in the case for the $^4He^+$ it is 4.*
The constant 378.4 is the instrument factor.

Column 1: year
Column 2: the fractional day of year at the beginning of the energy-stepping cycle.
Column 3-48: the counts and the phase space density in each w–interval, with $w \leq w < w_{i+1}$.
Column 49: the solar wind alpha particle ($^4He^{++}$) bulk speed in km/s.
Column 50: the solar wind alpha particle thermal speed in km/s.

Col		Col	
#1	Yr		
#2	DOY.frac		
#3	Counts w:2.04-13.00	#4	FW w:2.04-13.00
#5	Counts w:0.92-0.98	#6	FW w:0.92-0.98
#7	Counts w:0.98-1.06	#8	FW w:0.98-1.06
#9	Counts w:1.06-1.13	#10	FW w:1.06-1.13
#11	Counts w:1.13-1.22	#12	FW w:1.13-1.22
#13	Counts w:1.22-1.31	#14	FW w:1.22-1.31
#15	Counts w:1.31-1.40	#16	FW w:1.31-1.40
#17	Counts w:1.40-1.51	#18	FW w:1.40-1.51
#19	Counts w:1.51-1.62	#20	FW w:1.51-1.62
#21	Counts w:1.62-1.74	#22	FW w:1.62-1.74
#23	Counts w:1.74-1.87	#24	FW w:1.74-1.87
#25	Counts w:1.87-2.00	#26	FW w:1.87-2.00
#27	Counts w:2.00-2.15	#28	FW w:2.00-2.15
#29	Counts w:2.15-2.31	#30	FW w:2.15-2.31
#31	Counts w:2.31-2.48	#32	FW w:2.31-2.48
#33	Counts w:2.48-2.71	#34	FW w:2.48-2.71
#35	Counts w:2.71-3.07	#36	FW w:2.71-3.07
#37	Counts w:3.07-3.54	#38	FW w:3.07-3.54
#39	Counts w:3.54-4.16	#40	FW w:3.54-4.16
#41	Counts w:4.16-4.97	#42	FW w:4.16-4.97
#43	Counts w:4.97-5.94	#44	FW w:4.97-5.94
#45	Counts w:5.94-7.23	#46	FW w:5.94-7.23
#47	Counts w:7.23-9.11	#48	FW w:7.23-9.11
#49	vHe, solar wind alpha particle bulk speed (km/s)		
#50	vth, solar wind alpha particle thermal speed (km/s)		