Origin of the Elements

The bottom number gives the $\log_{10}$ of the solar system abundance shifted to 12 for H (Lodders 2003).
r-process to s-process ratios are from Simmerer et al. (2004)
Inspired by previous versions from Jennifer Johnson, Inese Ivans, and Anna Frebel
(see http://blog.sdss.org/2017/01/09/origin-of-the-elements-in-the-solar-system/
and http://www.cosmic-origins.org/).
This version by Andrew W. Steiner, awsteiner@utk.edu,
python code (GPLv3) at https://github.com/awsteiner/nstar-plot/periodic_table.py
There are significant uncertainties in some values that are not shown here.
The origin of some elements is strongly isotope-dependent.

1 H Hydrogen 12																	2 He Helium 10.984±0.02
3 Li Lithium 3.35±0.06	4 Be Beryllium 1.48±0.08											5 B Boron 2.85±0.04	6 C Carbon 8.46±0.04	7 N Nitrogen 7.90±0.11	8 O Oxygen 8.76±0.05	9 F Fluorine 4.53±0.06	10 Ne Neon 7.95±0.10
11 Na Sodium 6.37±0.03	12 Mg Magnesium 7.62±0.02											13 Al Aluminum 6.54±0.02	14 Si Silicon 7.61±0.02	15 P Phosphorus 5.54±0.04	16 S Sulfur 7.26±0.04	17 Cl Chlorine 5.33±0.06	18 Ar Argon 6.62±0.08
19 K Potassium 5.18±0.05	20 Ca Calcium 6.41±0.03	21 Sc Scandium 3.15±0.04	22 Ti Titanium 5.00±0.03	23 V Vanadium 4.07±0.03	24 Cr Chromium 5.72±0.05	25 Mn Manganese 5.58±0.03	26 Fe Iron 7.54±0.03	27 Co Cobalt 4.98±0.03	28 Ni Nickel 6.29±0.03	29 Cu Copper 4.34±0.06	30 Zn Zinc 4.70±0.04	31 Ga Gallium 3.17±0.06	32 Ge Germanium 3.70±0.05	33 As Arsenic 2.40±0.05	34 Se Selenium 3.43±0.04	35 Br Bromine 2.67±0.09	36 Kr Krypton 3.36±0.08
37 Rb Rubidium 2.43±0.06	38 Sr Strontium 2.99±0.04	39 Y Yttrium 2.28±0.03	40 Zr Zirconium 2.67±0.03	41 Nb Niobium 1.49±0.03	42 Mo Molybdenum 2.03±0.04	43 Tc Technetium	44 Ru Ruthenium 1.89±0.08	45 Rh Rhodium 1.18±0.03	46 Pd Palladium 1.77±0.03	47 Ag Silver 1.30±0.06	48 Cd Cadmium 1.81±0.03	49 In Indium 0.87±0.03	50 Sn Tin 2.19±0.04	51 Sb Antimony 1.14±0.07	52 Te Tellurium 2.30±0.04	53 I Iodine 1.61±0.12	54 Xe Xenon 2.35±0.02
55 Cs Cesium 1.18±0.03	56 Ba Barium 2.25±0.03		72 Hf Hafnium 0.84±0.04	73 Ta Tantalum −0.06±0.03	74 W Tungsten 0.72±0.03	75 Re Rhenium 0.33±0.04	76 Os Osmium 1.44±0.03	77 Ir Iridium 1.42±0.03	78 Pt Platinum 1.75±0.03	79 Au Gold 0.91±0.06	80 Hg Mercury 1.23±0.18	81 Tl Thallium 0.88±0.04	82 Pb Lead 2.13±0.04	83 Bi Bismuth 0.76±0.03	84 Po Polonium	85 At Astatine	86 Rn Radon
87 Fr Francium	88 Ra Radium		104 Rf Rutherfordium	105 Db Dubnium	106 Sg Seaborgium	107 Bh Bohrium	108 Hs Hassium	109 Mt Meitnerium	110 Ds Darmstadtium	111 Rg Roentgenium	112 Cn Copernicium	113 Nh Nihonium	114 Fl Flerovium	115 Mo Moscovium 2.03±0.04	116 Lv Livermorium	117 Ts Tennessine	118 Og Oganesson

57 La Lanthanum 1.25±0.06	58 Ce Cerium 1.68±0.02	59 Pr Praseodymium 0.85±0.03	60 Nd Neodymium 1.54±0.03	61 Pm Promethium	62 Sm Samarium 1.02±0.04	63 Eu Europium 0.60±0.04	64 Gd Gadolinium 1.13±0.02	65 Tb Terbium 0.38±0.03	66 Dy Dysprosium 1.21±0.04	67 Ho Holmium 0.56±0.02	68 Er Erbium 1.02±0.03	69 Tm Thulium 0.18±0.06	70 Yb Ytterbium 1.01±0.03	71 Lu Lutetium 0.16±0.06
89 Ac Actinium	90 Th Thorium 0.16±0.04	91 Pa Protactinium	92 U Uranium −0.42±0.04	93 Np Neptunium	94 Pu Plutonium	95 Am Americium	96 Cm Curium	97 Bk Berkelium	98 Cf Californium	99 Es Einsteinium	100 Fm Fermium	101 Md Mendelevium	102 No Nobelium	103 Lr Lawrencium

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