

Abstract - Isotopic signatures in the coma of 67P and their relation to the origin of cometary material.

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By now we have detected deuterated water, methanol, hydrogen sulfide and ammonia in the coma of comet 67P. Among them is also doubly deuterated water. We have several sulfur isotopes where we could identify ^{33}S and ^{34}S . The same is true for ^{15}N . By the time of the Rhodes SWT we should also have values for the oxygen isotopes in water apart from the already published value for $\text{C}^{16}\text{O}^{18}\text{O}$. $^{13}\text{C}/^{12}\text{C}$ could at least be identified in CO and CO₂. And finally we measured ^{28}Si , ^{29}Si and ^{30}Si . In addition there are at least some isotopes of Ar, Kr and Xe available. These measurements are complemented by measurements of isotopes in refractories by COSIMA, e.g. sulphur. Although we certainly are not yet finished with the data analysis of isotopes, it is a good time to make a first assessment of if and how these isotopic ratios compare to 1. other comets, 2. meteorites, 3. Earth, 4. Sun and 5. other planets and try to get a coherent picture from them about the origin of cometary material.