TRIPLE OXYGEN ISOTOPES

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Abstract: Since the first discovery of isotopes of elements 100 years ago, the “detective” power of stable isotopes for processes that occurred in the past, and for elucidating mechanisms at the molecular level, has impressed researchers. While most are interested in the normalized abundance ratios of two isotopes of an element, further power was unleashed when researchers investigated the relationship of three or more isotopes of the same element, e.g., $^{16}$O, $^{17}$O, and $^{18}$O for oxygen. This Element focuses on the history of discovery of triple isotope effects, the conceptual framework behind these effects, and major lines of development in the past few years of triple oxygen isotope research.

Keywords: Ozone, $^{17}$O anomaly, Triple isotope exponent, Slope, Minor deviations, $\delta-\delta$ space, 0.5305

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## Contents

1. Introduction 1
2. The First Measurement of $\delta^{17}$O Value 3
3. Terminology and Concepts in Triple Oxygen Isotopes 4
4. Origin of Large $^{17}$O Anomalies in Nature 7
5. Origin of Minor $^{17}$O Deviations 9
6. Analytical Methods and Material Preparation 9
7. Representative Case Studies of Geological Interests 10
8. Outlook 12
9. Key Papers 12

References 16