Record Nr.	UNISA996198746403316
Titolo	Hawaiian volcanoes : from source to surface / / Rebecca Carey [and three others], editors
Pubbl/distr/stampa	Washington, District of Columbia : , : American Geophysical Union, , 2015 ©2015
ISBN	1-118-87211-8 1-118-87207-X 1-118-87216-9
Descrizione fisica	1 online resource (599 p.)
Collana	Geophysical Monograph Series ; ; 208
Disciplina	551.2109969
Soggetti	Volcanoes - Hawaii Volcanoes - Hawaii - History Hawaii
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"This Work is a co-publication between the American Geophysical Union and John Wiley and Sons, Inc."
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Title Page; Copyright Page; Contents; Contributors; Preface; About the Companion Website; Chapter 1 How and Why Hawaiian Volcanism Has Become Pivotal to Our Understanding of Volcanoes from Their Source to the Surface; Abstract; 1.1. Introduction; 1.2. What Has Attracted Volcanologists to Hawai'i?; 1.3. How Have Studies of Hawaiian Volcanoes Influenced Our Knowledge of Magmatic and Volcanic Processes?; 1.3.1. Origin of Magma Series and Melting History of Hawaiian Volcanoes; 1.3.2. Noble Gases-Helium Isotopes; 1.3.3. Marine Studies of Hawai'i; 1.3.4. Dynamics and Emplacement of Lava Flows 1.4. SummaryAcknowledgments; References; Chapter 2 Seismic Constraints on a Double-Layered Asymmetric Whole-Mantle Plume Beneath Hawai'i; Abstract; 2.1. Introduction and Motivation; 2.2. Data and Method; 2.3. Imaging Results; 2.4. Resolution; 2.5. Discussion; 2.5.1. Structure and Origin of Plume Conduit; 2.5.2. Upper Mantle Structure and Double-Layered Plume; 2.5.3. Plume Interaction with Lithosphere; 2.6. Summary; Acknowledgments; References; Chapter 3 Asymmetric Dynamical Behavior of Thermochemical Plumes and

1.

	Implications for Hawaiian Lava Composition; Abstract; 3.1. Introduction 3.2. Methods and Model Description3.3. Results; 3.3.1. Double Layering of Plume Material in Upper Mantle; 3.3.2. Asymmetry in Plume Behavior and Melting; 3.3.3. Implications of Seismic Constraints on Plume Dynamics; 3.4. Discussion; 3.5. Conclusions; Appendix: Melting, Density, and Rheology Parameterizations; 3A.1. Melting Parameterization; 3A.2. Density Parameterization; 3A.3. Rheology Parameterization; Acknowledgments; References Chapter 4 Major-Element and Isotopic Variations in Mauna Loa Magmas over 600.ka: Implications for Magma Generation and Source Lithology as Mauna Loa Transits the Hawaiian PlumeAbstract; 4.1. Introduction; 4.2. Compositional Variation in Mauna Loa Lavas; 4.2.1. Sampling and Ages; 4.2.2. Major Elements; 4.2.3. Isotopic Ratios of Sr, Nd, and Pb; 4.3. Discussion; 4.3.1. Covariation of Major Elements and Isotopes; 4.3.2. Why Such Uniformity in SiO2 in Mauna Loa Magmas?; 4.3.3. Ascending Peridotite Melt-Harzburgite Interaction; 4.4. Conclusions; Supplementary Digital Data; Acknowledgments ReferencesChapter 5 Lithium Isotopic Signature of Hawaiian Basalts; Abstract; 5.1. Introduction; 5.2. Samples and Methods; 5.3. Results; 5.3.1. Alteration Control; 5.3.2. Effect of Crystal Fractionation; 5.3.3. Lithium Isotopic Signature; 5.4.1. Lithium Isotopic Signature in Hawaiian Lavas: A Source Signature?; 5.4.2. Hawaiian End- Member Components in Lithium Isotopes; 5.4.3. Why Are Postshield Lavas Lighter in Lithium Isotopic Signature Than Shield Lavas? 5.4.4. Is MORB-Related Lithosphere or Asthenosphere Assimilated Into the Hawaiian Plume?
Sommario/riassunto	Hawaiian Volcanoes, From Source to Surface is the outcome of an AGU Chapman Conference held on the Island of Hawai'i in August 2012. As such, this monograph contains a diversity of research results that highlight the current understanding of how Hawaiian volcanoes work and point out fundamental questions requiring additional exploration. Volume highlights include: Studies that span a range of depths within Earth, from the deep mantle to the atmosphere Methods that cross the disciplines of geochemistry, geology, and geophysics to address issues of fundamental importance to Hawai'i's volc