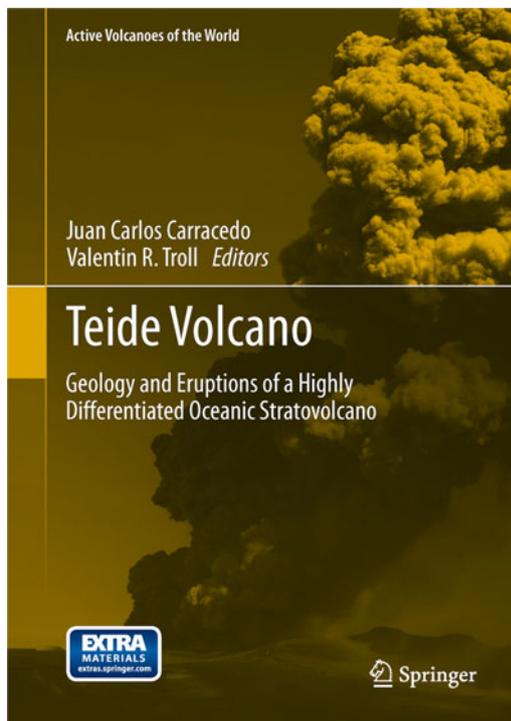


J.C. Carracedo and V.R. Troll (eds.): Teide volcano – Geology and eruptions of a highly differentiated oceanic stratovolcano

Springer-Verlag Berlin Heidelberg 2013, Active Volcanoes of the World XIV. Hardcover 279 pages, ISBN 978-3-642-25892-3

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Accepted: 9 September 2013
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Two new book series in volcanology were launched recently by Springer-Verlag: *Advances in Volcanology* and *Active Volcanoes of the World*. Both book series have been endorsed by the International Association of Volcanology and Chemistry of the Earth's Interior (IAVCEI), and are official book series of IAVCEI. While the *Advances in Volcanology* series is expected to offer research-driven books in cutting-

edge areas of volcanology, the *Active Volcanoes of the World* book series intends to offer modern summaries of volcanoes that are considered to be active or have at least shown some activity in the Quaternary and are suspected to be still active. Since 2010, numerous book proposals have been submitted to the series and many projects with leading experts are underway. In 2013, the first book has been published and is available for the volcanological community and for general readers. The book is about Teide Volcano in the Canary Islands, Spain. Being first in a new book series, it carries a high responsibility and could largely determine the long-term success of the series. Here, I provide a few points I have identified by reading through the first book available in the *Active Volcanoes of the World* book series.

The newly launched *Active Volcanoes of the World* book series is reborn following an earlier project that was supported by IAVCEI, entitled *Catalogue of the Active Volcanoes of the World, Including Solfatara Fields*. This early book series was a monumental work, listing every volcano known to have been active in the past 10,000 years, on every continent (but not the seafloor). Individual books of this series listed the basic volcanic geomorphology and eruption style, and gave descriptions of major eruptions, geographical location, and the most significant volcanic features of the described volcanoes. Naturally, a reference work like the *Catalogue of the Active Volcanoes of the World* needs to be updated from time to time with the latest research and analytical results and concepts. Since the *Catalogue of the Active Volcanoes of the World* was published from the late 1960s through the 1970s, volcanology has evolved enormously and our knowledge of even the well-studied and well-known volcanoes has expanded greatly. In their new series, Springer intends, with the official support and endorsement of IAVCEI, to update this important reference work by systematically summarizing the latest research results and most up-to-date knowledge on the active volcanoes of the world.

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I can now report that the first volume of the Active Volcanoes of the World series provides a truly modern version of the most fundamental and relevant knowledge needed for anyone to understand one of the most complex and geochemically differentiated oceanic island volcanoes: Teide, part of the Canary Islands in Spain. The book is a very attractive hard cover publication with the high standards of printing and binding that we associate with Springer. The visually balanced cover, lettering and the abundant colour images make the book attractive not only for specialists but also for the general reader interested in the volcanic features of Teide, which is a common tourist destination in the mid-Atlantic. The book consists of 14 chapters that are logically linked together and internally well-structured by short and easy to follow paragraphs. Each chapter can be read as a stand-alone story, and has a fully referenced citation list of the most modern, as well as many historic and not so well known but significant, publications. In this respect, each chapter could be viewed as a complete peer-reviewed scientific review article. Each of the chapters is relatively short and, therefore, each is relatively easy to read for anyone with a general earth sciences background, or even for geotourists who intend to explore the volcano. Each chapter contains numerous high-quality attractive colour figures that are easy to understand and make the chapters more reader friendly. Many of the figures are original and designed specifically for this book. I particularly liked the idea of having each chapter consist of relatively short paragraphs. This makes the individual chapters easy to follow and lets the reader explore with ease the scientific information listed in the chapters. I found the 14 chapters excellently designed and linked together. The first chapter is particularly interesting and important; it summarizes the volcano's scientific history using interesting facts and data, of which many of us will not be aware. The colour illustrations and reprints from old maps, for instance, are an eye-catching way to make the reader go deeper in understanding the Teide Volcano. The next two chapters provide fundamental general geological information regarding Teide's geodynamic situation. These two chapters are illustrated with numerous 3D cartoons that help significantly in allowing readers to envision the main geodynamic processes that governed the formation of the volcanoes comprising the Canary Islands. The fourth and fifth chapters provide a short but comprehensive summary of the volcanic stratigraphy, which must be known to fully take advantage of detailed descriptions of the most recent activity of Teide volcano. In addition, in the fifth chapter, we can find information on the largely overlooked pre-Teide volcanism, which nicely frames the information on the volcanic geology of Teide volcano itself. The sixth chapter provides a detailed summary of dating techniques that have been applied to gain an understanding of the volcanic evolution of Teide. This chapter, in addition to outlining the geochronology of eruptive events of Teide, also provides some background information on dating techniques and their limitations. The seventh and eighth chapters deal with the detailed volcanic stratigraphy of modern Teide, separating its

eruptive history into the early stages and a post-2 ka period, developing gradually for the reader the links between observational volcanology and volcanic stratigraphy. The 9th, 10th and 11th chapters are compact summaries of the geochemical and volcanic petrological information gained over the past decades from Teide volcano. The well-known studies on magma differentiation and magma mixing, which are key processes in formation of the highly differentiated and highly diverse magmatic suites associated with Teide volcano, are summarised in two chapters, giving comprehensive yet simple guidelines for the reader to understand the link between the data and the interpretations, which have provided fundamental new ideas for our understanding of these petrological processes globally. I particularly liked these chapters since they are compact, concise, written in plain language and also provide detailed citation lists to the original data sources in top mainstream journals. The 12th chapter is dedicated to describing the main eruptive styles documented in association with the volcanic history of Teide volcano. This chapter has been separated into sections on effusive, magmatic explosive and phreatomagmatic explosive processes as the main eruption styles associated with Teide volcano. Beside the technical descriptions, this chapter also provides some detail, or at least points to the original studies in its citation list, of the main volcanic eruptions of Teide volcano. The 13th chapter is a comprehensive summary of the knowledge derived from various geophysical studies on Teide volcano. Along with standard descriptions, the chapter provides a little bit of critical information on the validity of applying various geophysical methods to volcanoes such as Teide and, in addition, provides a full picture of how complex geological information can drive our understanding of a volcanic system from source to surface. The 14th chapter may be the most interesting for a general reader because it provides an up-to-date summary of the volcanic hazards known from the Teide volcano. This chapter is a relatively easy read, and provides the reader with some key information about how volcanic hazards can be studied. The various volcanic hazards have been separated by paragraph, and are presented in a very focused manner. While I find this information valuable, some extra information could have been a good addition to the chapter, such as detailed information on how lava flow inundation maps were created. While I understand that this might be a small detail given the purpose of the book, I think with a little care such information could have been included here.

Overall, I think the first book of the Active Volcanoes of the World series, Teide Volcano, is an excellent work that is detailed enough to be a reference book on the shelf of any volcanologist. The easy to understand style of the book means that it could equally be a general guidebook for a geotourist wishing to plan a trip to Teide. I can recommend this book to anyone with a reasonably good earth science background and a general interest in volcanic geology.