

FRIENDS OF THE PLEISTOCENE, ROCKY MOUNTAIN-CELL, 45TH FIELD CONFERENCE

**PLIO-PLEISTOCENE STRATIGRAPHY AND GEOMORPHOLOGY OF
THE CENTRAL PART OF THE ALBUQUERQUE BASIN**

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INTRODUCTION

This field-guide accompanies the 45th annual Rocky Mountain Cell of the Friends of the Pleistocene (FOP), held at Isleta Lakes, New Mexico. The Friends of the Pleistocene is an informal gathering of Quaternary geologists, geomorphologists, and pedologists who meet annually in the field.

The field guide has been separated into two parts. Part C (open-file report 454C) contains the three-days of road logs and stop descriptions. Part D (open-file report 454D) contains a collection of mini-papers relevant to field-trip stops. This field guide is a companion to open-file report 454A and 454B, which accompanied a field trip for the annual meeting of the Rocky Mountain/South Central Section of the Geological Society of America, held in Albuquerque in late April. Errors in compiling this field-excursion are undoubtable. Please kindly inform the authors of any errors or omissions. We apologize for any unintended omissions or citations.

In keeping with the informal character of Rocky Mountain Cell FOP field excursions, this guidebook contains preliminary findings of a number of concurrent projects being worked on by the trip leaders. Thus, this guidebook should be considered as a type of progress report on geologic mapping, stratigraphic work, and radioisotopic dating.

The contents of the road logs and mini-papers have been placed on open file in order to make them available to the public as soon as possible. Revision of these papers is likely because of the on-going nature of work in the region. The papers have not been edited or reviewed according to New Mexico Bureau of Geology and Mineral Resources standards. The contents of this report should not be considered final and complete until published by the New Mexico Bureau of Geology and Mineral Resources. Comments on papers in this open-file report are welcome and should be made to authors. The views and preliminary conclusions contained in this report are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the State of New Mexico, Pueblo of Isleta, or the U.S. Government.

ACKNOWLEDGEMENTS

The New Mexico Bureau of Geology and Mineral Resources (P.A. Scholle, Director) supported this field trip. Much of the data presented during this field trip are from numerous open-file reports released by the New Mexico Bureau of Geology and Mineral Resources during the course of cooperative geologic mapping with the U.S. Geological Survey (New Mexico Statemap Project, P.W. Bauer, Program Manager). We are particularly grateful to the people of the Pueblo of Isleta for granting access during many of the stratigraphic and mapping studies discussed during the field trip. In particular, we thank the Honorable Alvino Lucero, Governor of Isleta, for granting access to study stratigraphically significant sites on the reservation.

We are indebted to Florian Maldonado for his help and important work on the western part of the Isleta Reservation. Bill McIntosh and Nelia Dunbar provided the many important dates and tephrochronologic correlations in the Albuquerque Basin. We are grateful to John Hawley, Steven Cather, Dan Koning, and Richard Chamberlin for their assistance and advice. We thank Tien Grauch, Dirk Van Hart, and Keith Kelson for freely sharing their ideas on the geology and structure of the Isleta Reservation and Sandia National Laboratories area. In particular, the site-wide hydrologic project at Sandia National Laboratories conducted by GRAM Inc. and William Lettis and Associates (Thomas et al., 1995) was especially helpful in documenting the geology of Kirtland Air Force Base and the Sandia Labs. We also thank Jim Cole and Byron Stone for sharing some of their ideas on the late-stage development of the basin. David McCraw and Patricia Jackson-Paul assisted in the field and in the preparation of some of the map and poster figures. Leo Gabaldon assisted with drafting of the simplified geologic map of the Isleta Reservation. Glen Jones and Mark Mansell produced the shaded-relief images from 10-m DEM data released by the U.S. Geological Survey.

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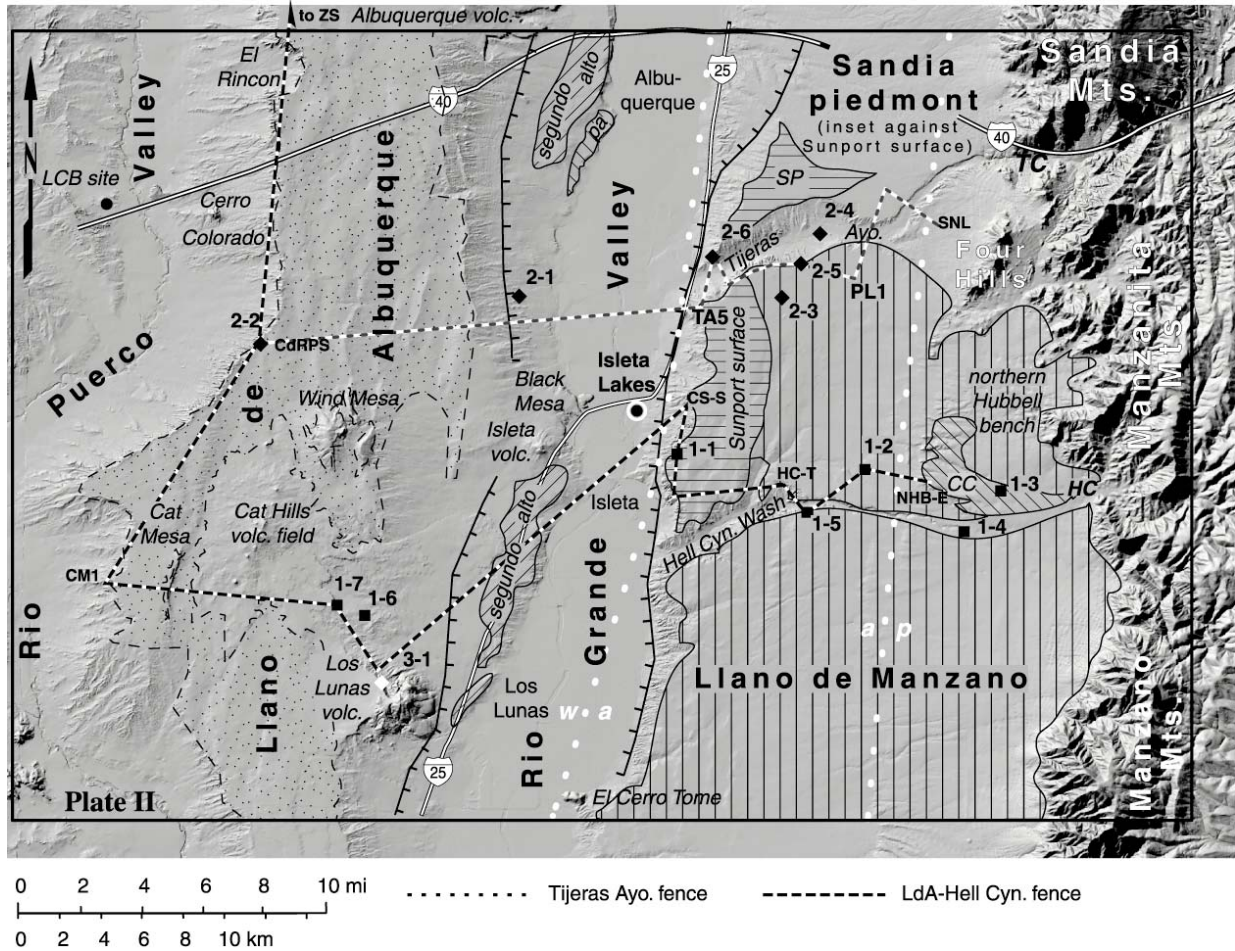


Plate I. Shaded-relief map of the Isleta Reservation and southern Albuquerque field-trip area illustrating the locations of day 1 (black square), day 2 (black diamond), and day 3 (white diamond) stops. All trips start from the Isleta Lakes Campground (black circle) in the inner valley of the Rio Grande. The Llano de Albuquerque is a broad, south-sloping interfluvium between the Rio Puerco and Rio Grande Valleys, which was formed during late Pliocene time. The hachured lines indicate the approximate boundary of inset fluvial terrace deposits of the Rio Grande Valley. The broad low-relief surfaces east of the Rio Grande Valley contain the Pleistocene Sunport (SP) and Llano de Manzano surfaces, and the Pliocene Cañada Colorada surface (CC). The approximate eastern and western limits of the axial-fluvial Rio Grande (a) is denoted depicted by white dotted lines. TC and HC indicate the mouths of Tijeras, and Hell Canyons, respectively. Nearly all of the north- and northwest-trending scarps are faults that cut these geomorphic surfaces. Base from shaded-relief image in Maldonado et al. (1999) and was prepared from 10-m DEM data from the National Elevation Database of the U.S. Geological Survey.

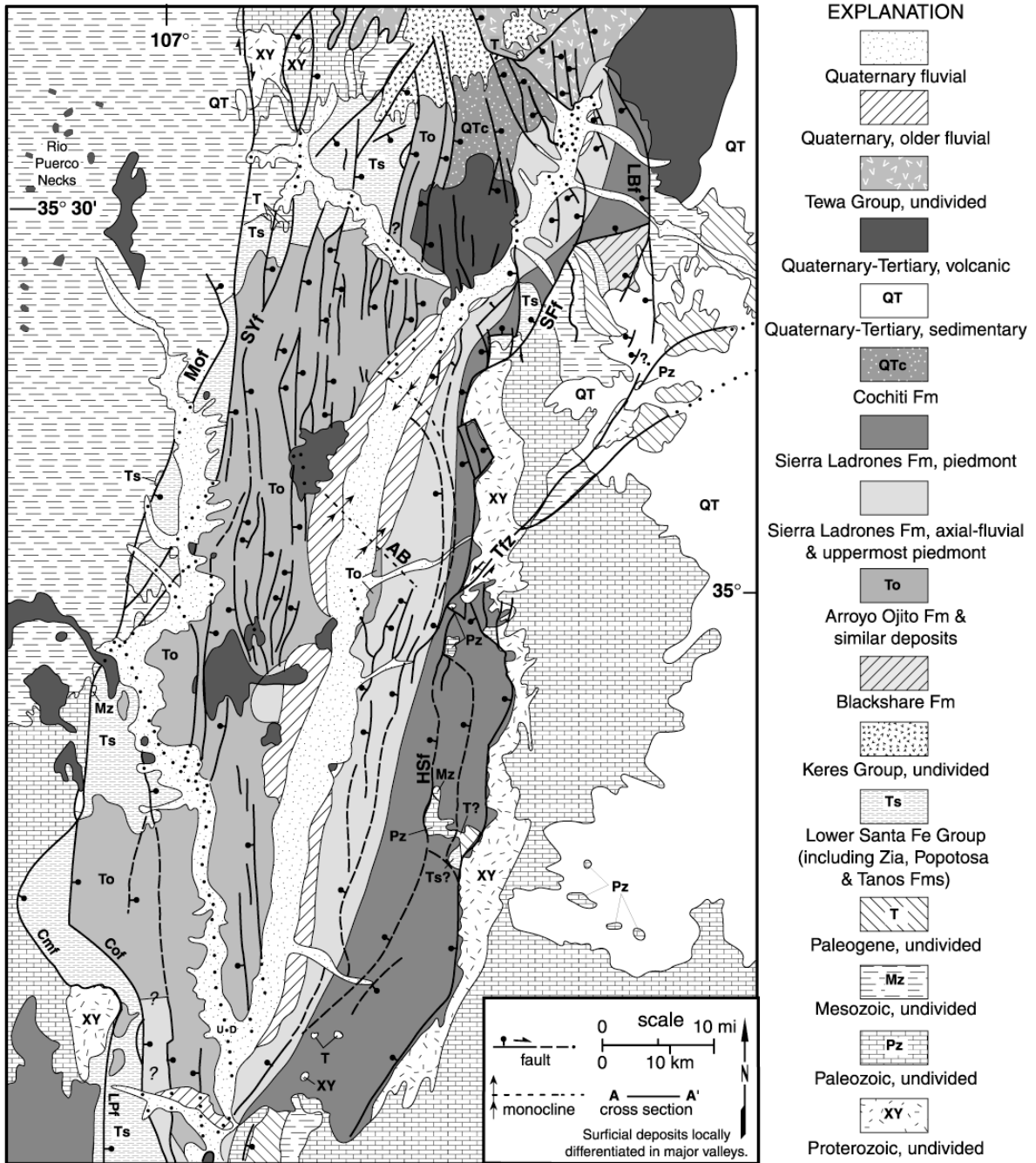


Plate II. Simplified geologic map of the Albuquerque Basin (Connell, in preparation).

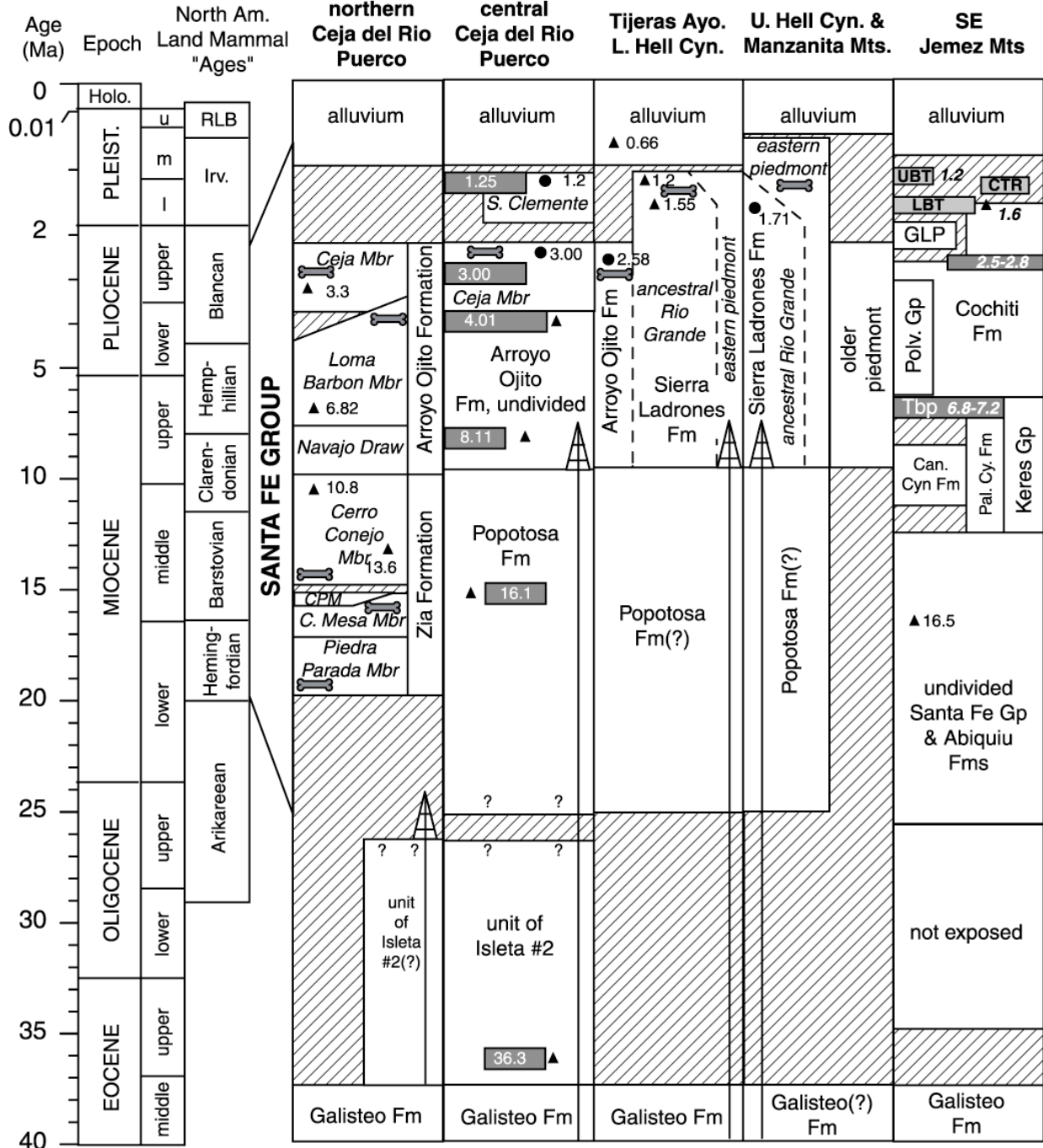


Plate III. Stratigraphic correlation diagrams of deposits in the central Albuquerque Basin and southern Jemez Mountains. Black triangles and circles denote radioisotopically dated primary, and fluviually recycled volcanic products, respectively. Bones denote biostratigraphically significant fossil mammal sites. Volcanic units are shaded. Dates are from various sources and noted in Ma. Deposits of Zia Fm include the Chamisa Mesa (C. Mesa) and Cañada Pilares (CPM) mbrs. Rancholabrean (RLB) and Irvingtonian (Irv) are Pleistocene divisions of the North American Land Mammal "ages."