

THE SHORT NORMAL PALEOMAGNETIC INTERVAL - C29R.1N – IS WITHIN THE PALEOCENE OJO ALAMO SANDSTONE, SAN JUAN BASIN, NEW MEXICO

James E. Fassett

USGS retired, Independent Research Geologist, 552 Los Nidos Dr, Santa Fe, NM, 87501, US,
jimgeology@centurylink.net

A short normal paleomagnetic polarity interval has been documented within the Ojo Alamo Sandstone at six localities in the southern San Juan Basin of New Mexico. Where the top and base of this normal polarity interval have been determined it is 11-12 meters thick. This polarity interval was initially thought to be magnetochron C29n, but relatively new $40^{Ar}/39^{Ar}$ ages (Fassett, 2013) and published palynologic data (Fassett, 2009) prove that this interval must be within the upper (Paleocene) part of chron C29r and is labeled C29r.1n. This paleomagnetic normal chron is a previously unrecognized normal chron within C29r. The Cretaceous-Paleocene boundary is known to be within C29r and palynologic data clearly show that chron C29r.1n is above the K-Pg boundary and is thus in Paleocene strata. Williamson et al. (2008) indicated that this short normal magnetochron is chron C30n however published palynologic data clearly indicate that Maastrichtian-age strata are absent in the San Juan Basin and thus C30n, that is within the Maastrichtian, cannot be present in the basin. Dinosaur fossils within C29r.1n, and above in the Paleocene Ojo Alamo Sandstone, are therefore indisputably Paleocene in age.

References:

- Fassett, J.E., 2009, New geochronologic and stratigraphic evidence confirms the Paleocene age of the dinosaur-bearing Ojo Alamo Sandstone and Animas Formation in the San Juan Basin, New Mexico and Colorado: *Paleontologia Electronica*, v. 12, no. 1, 146 p. (on-line pub. at http://palaeo-electronica.org/splash/index12_1.html)
- Fassett, J.E., 2013, Revised geochronology and paleomagnetic interpretations of uppermost Cretaceous and lowermost Paleocene rocks in the southern San Juan Basin, New Mexico, in Zeigler, K., Timmons, J.M., Timmons, S., and Semken, S., eds., *Geology of Route 66 region: Flagstaff to Grants: New Mexico Geological Society 61st Annual Field-Conference Guidebook*, p. 215-222.
- Williamson, T.E., Nichols, D.J., and Weil, A., 2008, Paleocene palynomorph assemblages from the Nacimiento Formation, San Juan Basin, New Mexico, and their biostratigraphic significance: *New Mexico Geology*, V. 30, Number 1, p. 3-11.

Keywords:

Paleocene dinosaurs, San Juan Basin, Cretaceous-Paleogene boundary

pp. 27

2018 New Mexico Geological Society Annual Spring Meeting
April 13, 2018, Macey Center, New Mexico Tech campus, Socorro, NM