

3D models related to the publication: New Cretaceous dinosaur track sites from the Jiaguan Formation, Sichuan Province, China: ichnotaxonomy and preservation

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Abstract

The present 3D Dataset contains the 3D models analyzed in Xing et al. (in press), Newly discovered Cretaceous dinosaur track sites from the Jiaguan Formation, Sichuan Province, China: ichnotaxonomy and preservation. The dataset includes photogrammetric 3D models of the specimens shown in Figures 6–9 and 16–17 of the original article. These correspond to track-bearing slabs and selected footprints from the Hongyangoukou and Jinyuxi tracksites and the Shimiaogou 2025 tracksite in the Gulin area, Sichuan Province, China. The Hongyangoukou material comprises three reddish-brown siltstone slabs preserving at least 61 theropod tracks, including nine trackways (HYGK-T1 to HYGK-T9) and isolated footprints (HYGK-TI1 onward). The Jinyuxi material comprises one isolated theropod natural cast (JYX-TI5) assigned to cf. *Eubrontes*, associated with microbially induced sedimentary structures (MISS). The Shimiaogou 2025 material comprises two slabs preserving at least 25 dinosaur footprints, including ornithopod trackways SMG25-O1 and SMG25-O2, theropod trackway SMG25-T1, and isolated footprints; all occur as natural positive reliefs. The 3D surface models are provided in PLY format.

Keywords: Dinosaur tracks, Jiaguan Formation, Photogrammetry

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INTRODUCTION

This 3D dataset provides photogrammetric models of the track-bearing slabs and selected footprints illustrated in Figures 6–9 and 16–17 of Xing et al. (in press) (Fig. 1 and table 1). The original study investigates seven Jiaguan Formation tracksites in the Gulin area, Sichuan Province, China, and aims to resolve the ichnotaxonomy, morphological variation, and preservation histories of these dinosaur track assemblages. Because dinosaur body fossils are scarce in the Cretaceous Jiaguan Formation, footprints provide the primary record of terrestrial vertebrate communities and their environments.

METHODS

Photogrammetric image sets were collected in the field with an iPhone 17 Pro Max (Pro Fusion camera system, 48 MP sensor, 24 mm Main lens); the three best-preserved track areas yielded image sets of 38, 65, and 249 photographs. The 3D surfaces were processed in Agisoft Metashape Professional v.1.6.3. MeshLab v2020.06 was used to center and orient the virtual 3D models in a Cartesian reference system. Surface relief was displayed using filters implemented in CloudCompare v2.10.2 and

ParaView v5.9.0, following the workflow of Xing et al. (2021). The 3D surface models are provided in .ply format and can be opened with a wide range of freeware.

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Inv nr.	Taxon	Description
HYGK Slab 1	<i>Eubrontes</i> isp.	tridactyl theropod footprints (Morphotype I)
HYGK Slab 2	<i>Eubrontes</i> isp.	tridactyl theropod footprints (Morphotype II)
HYGK Slab 3	<i>Eubrontes</i> isp.	tridactyl theropod footprints (Morphotype I)
JYX-TI5	cf. <i>Eubrontes</i> isp.	tridactyl theropod footprint
SMG25 Slab 1	<i>Grallator</i> ; <i>Caririchnium</i> isp.	theropod (cf. <i>Grallator</i>) and ornithopod (<i>Caririchnium</i> isp.) footprints.
SMG25 Slab 2	<i>Grallator</i> ; <i>Caririchnium</i> isp.	theropod (cf. <i>Grallator</i>) and ornithopod (<i>Caririchnium</i> isp.) footprints.

Table 1. List of footprint tracks 3D models.

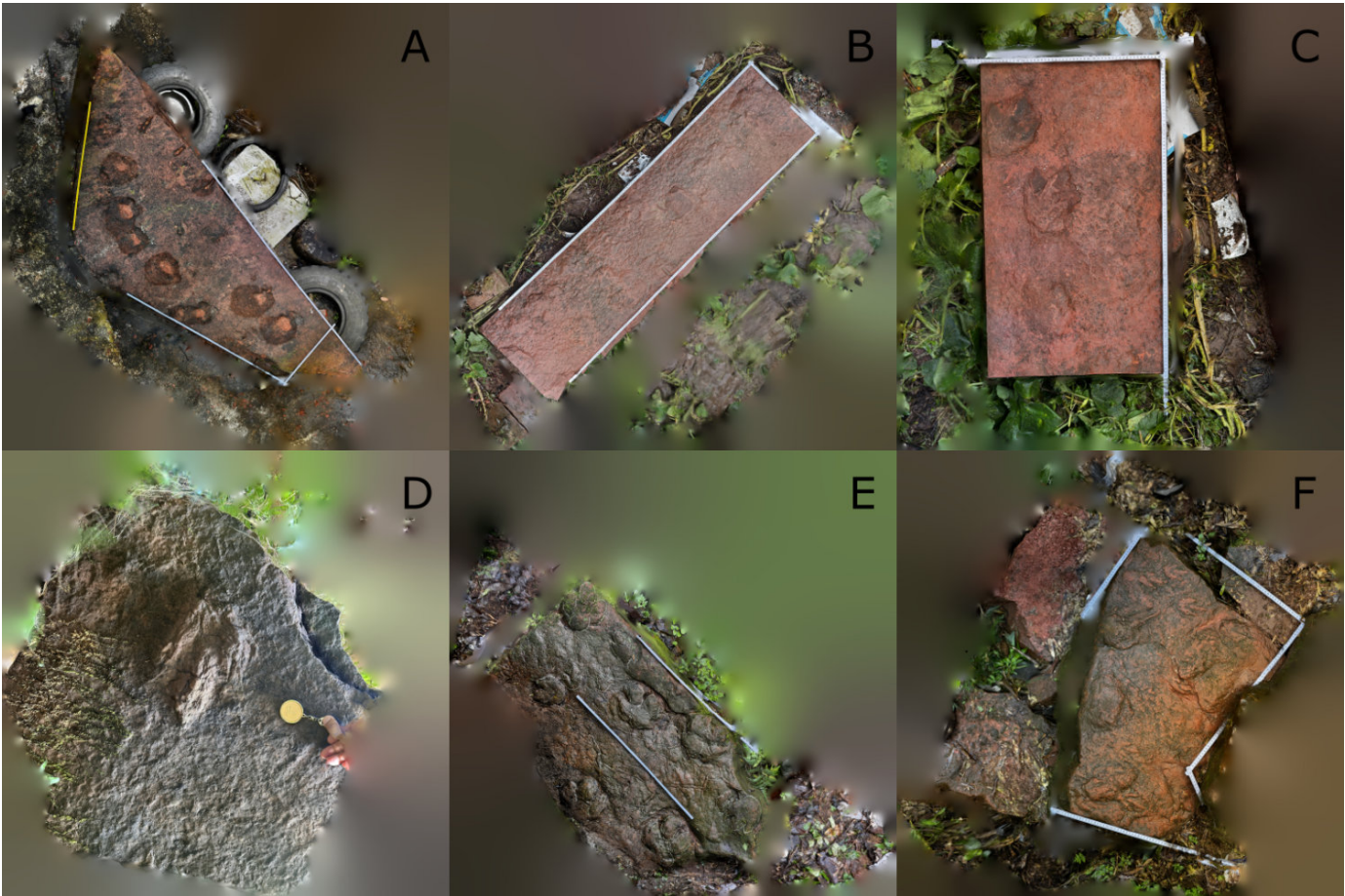


Figure 1. Composite 3D photogrammetric plate of six dinosaur track-bearing slabs from the Lower Cretaceous Jiaguan Formation, Gulin area, Sichuan Province, China. A, HYGK Slab 1 (original Fig. 6), Hongyangoukou tracksite, *Eubrontes*-like theropod tracks. B, HYGK Slab 2 (original Fig. 7), Hongyangoukou tracksite, *Eubrontes*-like theropod tracks. C, HYGK Slab 3 (original Fig. 8), Hongyangoukou tracksite, *Eubrontes*-like theropod tracks. D, JYX-TI5 (original Fig. 9), Jinyuxi tracksite, cf. *Eubrontes*, preserved as a natural cast; irregular linear ridges on the surface are interpreted as possible MISS. E, SMG25 Slab 1 (original Fig. 16), Shimiaogou 2025 tracksite, *Caririchnium* isp. and cf. *Grallator*. F, SMG25 Slab 2 (original Fig. 17), Shimiaogou 2025 tracksite, cf. *Grallator* and *Caririchnium* isp.