APPENDIX 1. Archaeological surveys, additional field campaigns and image processing

Archaeological survey and chronology

Identification of household units was based on the pattern of housing rooms (typically 2-3) around a courtyard (patio) with storage structures and low perimeter walls. A series of 20 AMS radiocarbon dates from 18 sites was drawn from samples of charcoal, seeds, and straw recovered mostly inside archaeological storage structures, and to a lesser extent from buildings and funerary contexts (table S2). All dates were calibrated and updated using OxCal v 4.3.2 with ShCal13 atmospheric curve (Bronk Ramsey and Lee 2013, Hogg et al. 2013). Analysis of ceramic material made it possible to define the different styles present in the sites and their chronological ascription. Radiocarbon datation consistent with ceramic ascription, place the occupation of these sites between the 13th and 15th centuries, in the LRDP (Late Regional Development Period).

Remote sensing, high-resolution imagery and mapping

Archaeological prospecting, surveys and excavations were complemented with two field campaigns in 2016 and 2017. For the identification of archaeological sites and agriculture surfaces by remote sensing, different high-resolution satellite coverages were used (GeoEye, DigitalGlobe, CNES/Astrium and CNES/Airbus). All records were subsequently corroborated, corrected, and complemented by fieldwork. For the elaboration of topographies and the Digital Elevation Model (DEM), we used the coverage of the Shuttle Radar Topography Mission (SRTM) v2 with a resolution of 1 arc second (~30 m), downloaded from the online Data Pool, courtesy of the NASA Land Processes Distributed Active Archive Center (LP DAAC), USGS/Earth Resources Observation and Science (EROS) Center, Sioux Falls, South Dakota, (https://lpdaac.usgs.gov/data_access/data_pool). The data were entered into the WGS84/UTM19S coordinate system, with bilinear interpolation at a resolution of 30 m. All records were converted to raster files with the same resolution as DEM, using QGIS software.

Twelve settlement sites were surveyed by aerial photogrammetry (n° 1, 3, 5, 6, 7, 8, 10, 13, 17, 32, 34 and 35). A kite system and a fixed wing drone took the aerial photographs. They were later processed with PhotoScan photogrammetry software, then georeferenced and orthorectified, obtaining high-resolution orthomosaics of the entire sites with a resolution of 15 mm/pixel. Based on these, a detailed cartography of the sites was made, and then corroborated with field observations and structural surveys. Both aerial photographs and site cartographies were integrated into the QGIS cartographic base, which made it possible to obtain exhaustive statistical data on the surface areas of the sites and on 549 household units and the housing and storage structures composing each of these units (household units ranged from 10 to 86 per site).

Fig. A1.1. Detailed maps of the study sites in the Intersalar region. Shaded areas show open collective spaces. Site numbers and names refer to identification in Fig. 1 and Table A3.1.

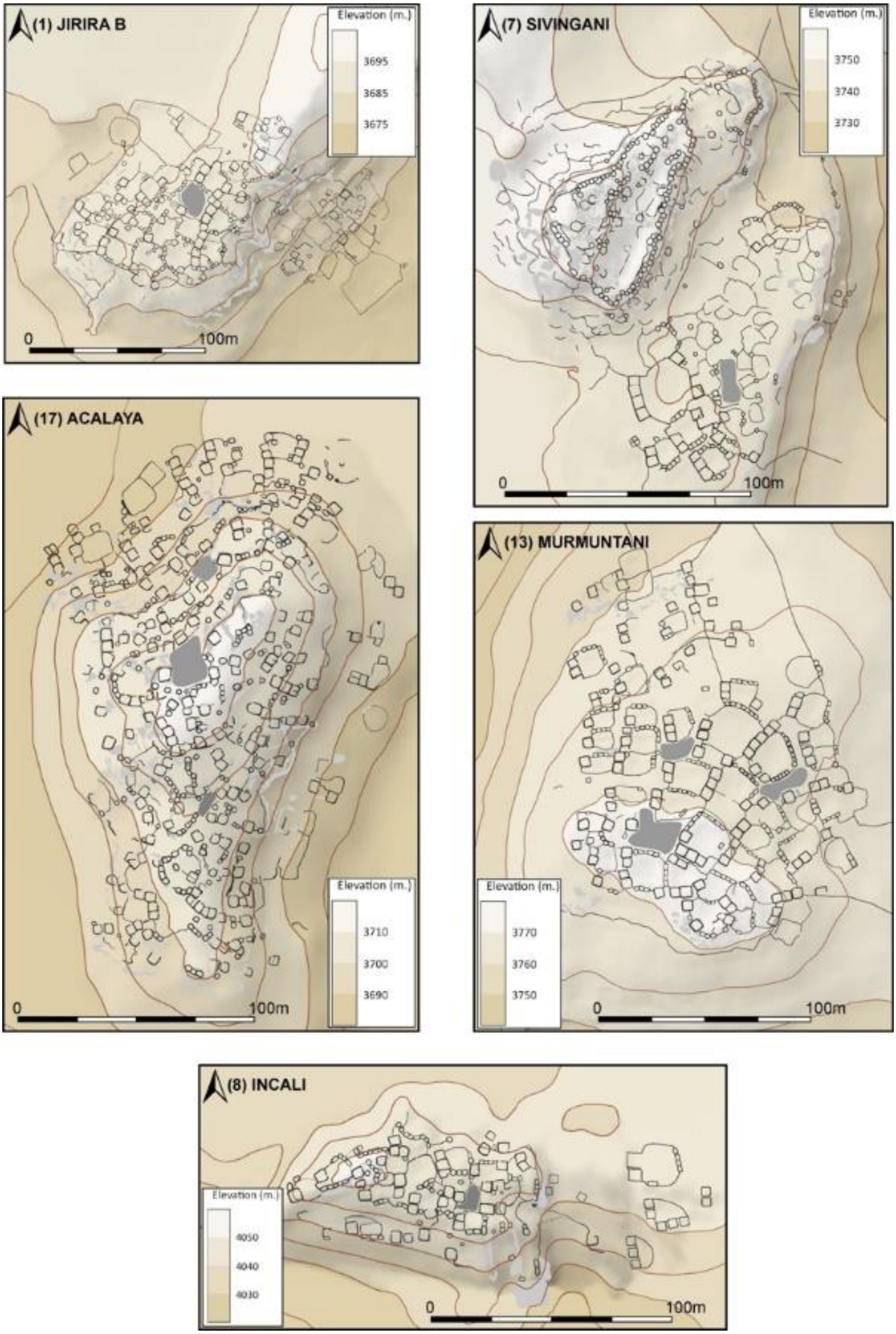
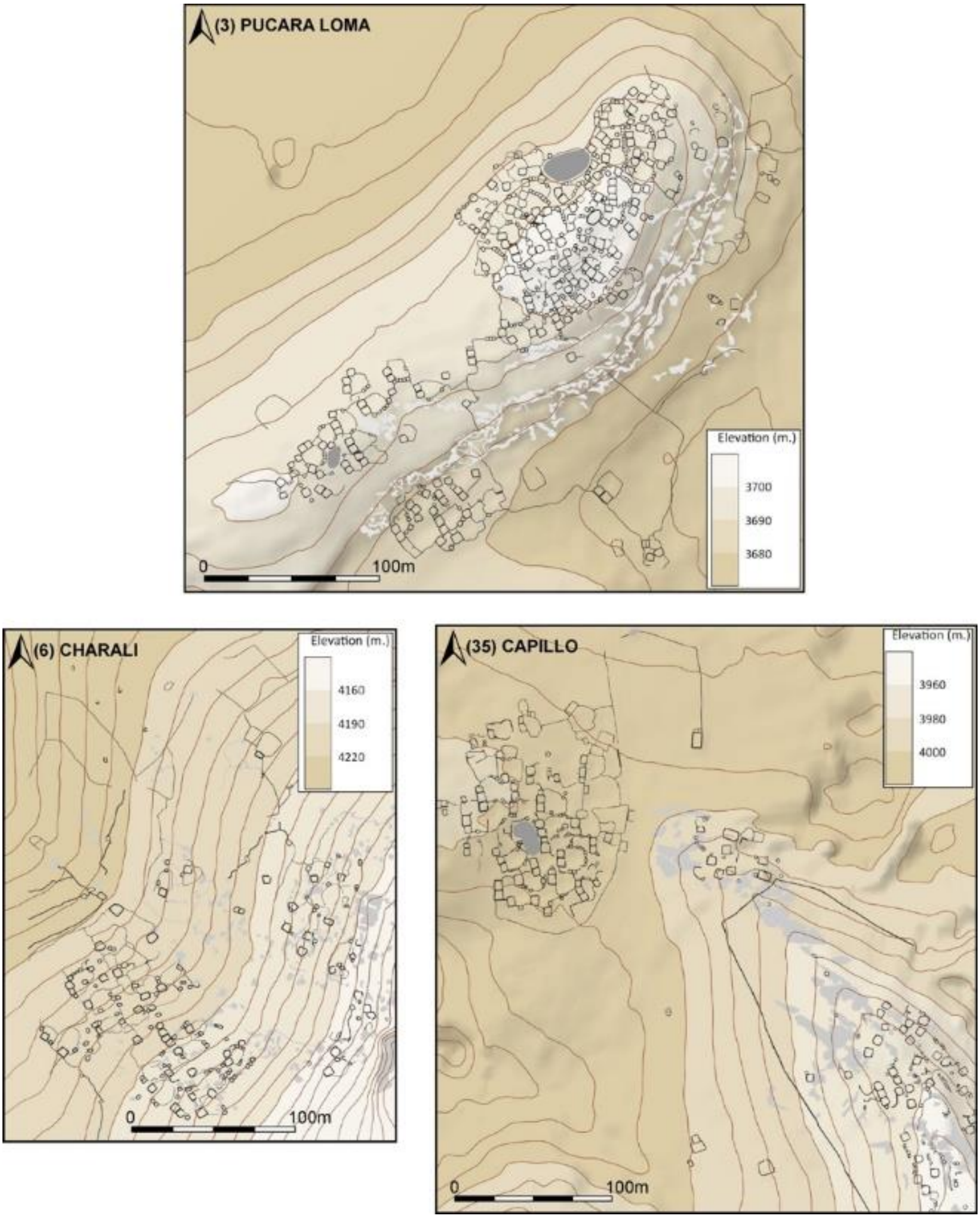


Fig. A1.1. Detailed maps of the study sites in the Intersalar region. Shaded areas show open collective spaces. Site numbers and names refer to identification in Fig. 1 and Table A3.1. *(continued)*



Literature cited

Hogg, G., Q. Hua, P. G. Blackwell, M. Niu, C. E. Buck, T. P. Guilderson, T. J. Heaton, J. G. Palmer, P. J. Reimer, R. W. Reimer, C. S. M. Turney, and S. R. H. Zimmerman. 2013. SHCal13 Southern Hemisphere Calibration, 0–50,000 Years cal BP. *Radiocarbon*. 55(4):1889–1903. https://doi.org/10.2458/azu_js_rc.55.16783

Bronk Ramsey, C., and S. Lee. 2013. Recent and planned developments of the program OxCal. *Radiocarbon*. 55(2):720–730. https://doi.org/10.1017/S0033822200057878