

INTRODUCTION

Analyzed data products (PDS4)

shape_models /

arrokoth_porter_2024_v01.obj

→ Shape model in Wavefront OBJ format (ASCII)

No BDS file (SPICE/DSK) like in previous PDS3 delivery (2022)

arrokoth_porter_2024.lblx

→ Label file associated to shape model

porteretal2024b.pdf

→ Document describing the reconstruction method

No thorough check of additional LBLX files

visual inspection: units, data input description, target ...

SHAPE MODEL

Description (LBLX)

arrokoth_porter_2024.lbx

Vertex units = OK (in « Citation information »)

Number of vertices / faces = OK

IAU rotational parameters, including W0 = OK

Four fields described in OBJ file: VERTEX, FACES, TEXTURE, NORMALS = OK

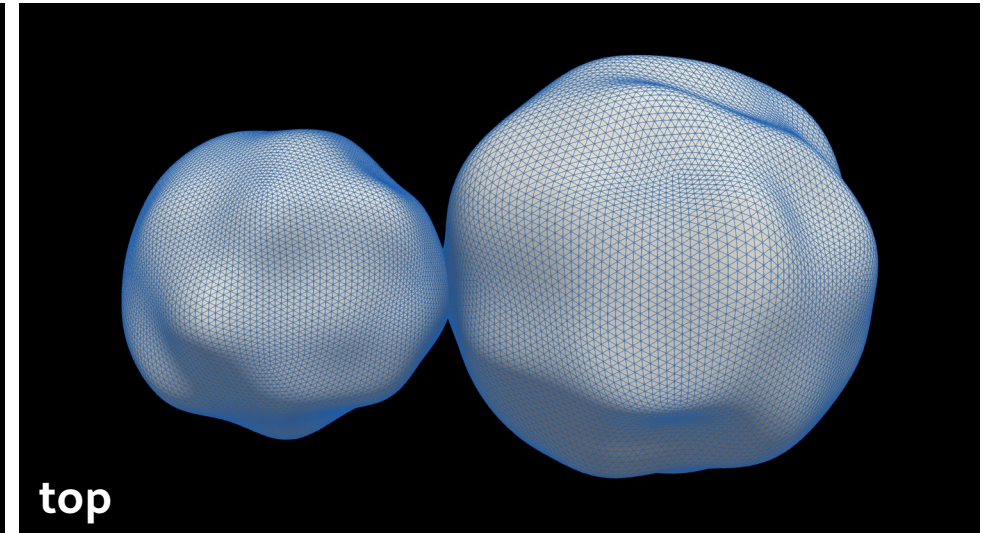
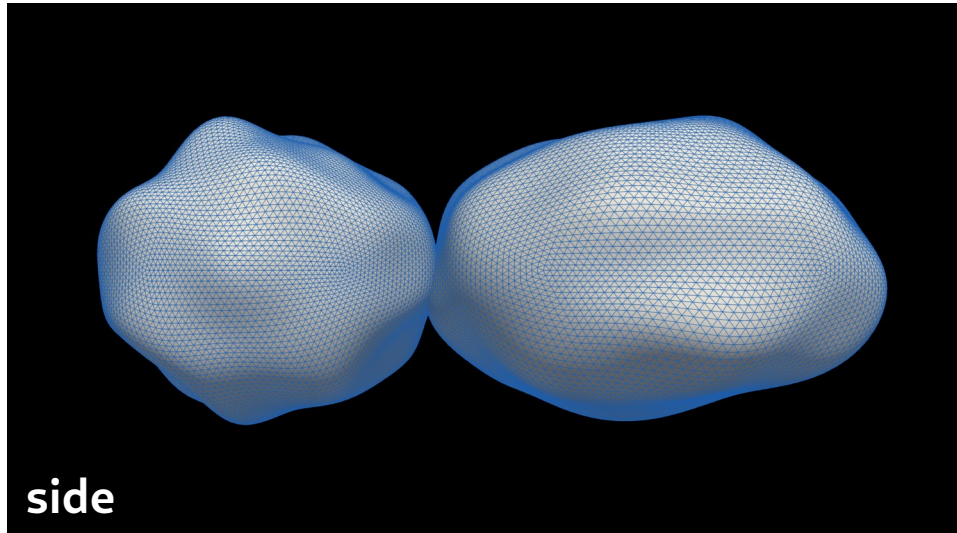
Minor Remarks:

- Indicate the unit of angles (= deg) defining IAU rotational parameters
- Add uncertainty of these angles (7 digits in file) ?
- Add coordinates units (km) in the VERTEX table section (tag « Name » if allowed) ?

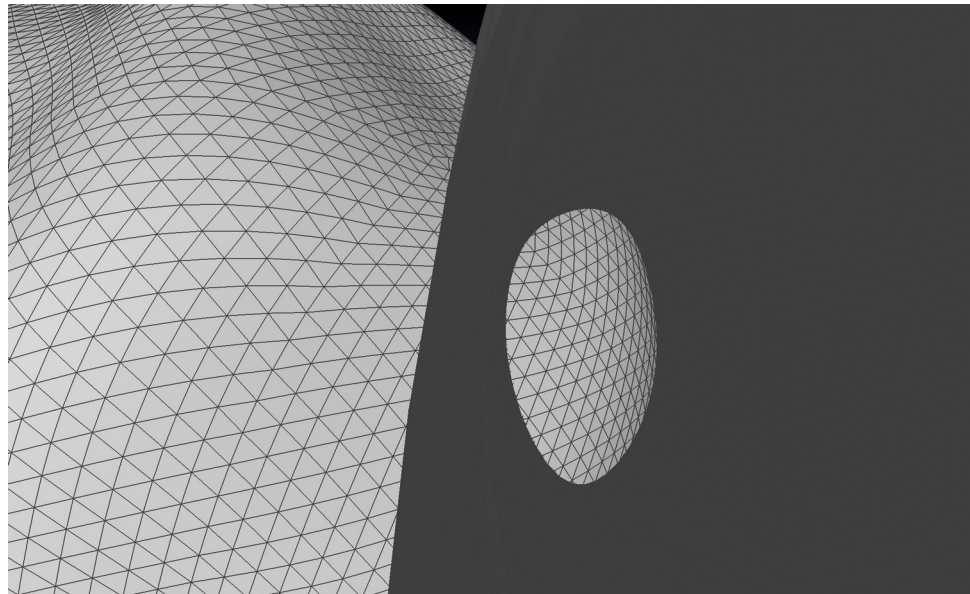
Units specified in « Citation information »

SHAPE MODEL

arrokoth_porter_2024_v01.obj



Shape model = two separate concatenated lobe models



SHAPE MODELS

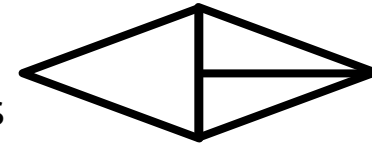
Verification

arrokoth_porter_2024_v01.obj

Load OBJ file in Paraview and Meshlab s/w

Check for:

- duplicate vertices/faces
- unreferenced vertices
- Alignment of model axes along PAIs
- T-junctions
- zero-area faces



Results

All = OK

PAIs alignment (personal code) = 0.3° (< sampling angle)

Minor Remarks:

- Usefulness of TEXTURE coordinates field ? No texture map provided.
Remove field ?

DOCUMENT

Verification

porteretal2024b.pdf

Methodology OK

Match with delivered data SEE REMARK

Scientific implications

Remark:

- The albedo map calculated during the reconstruction is not in the dataset

Minor Remarks:

- Summarize fitted Hapke parameters (except SSA) in a Table (section 3) ?
- Fig. 3 in the document => add albedo scale bar ?