**Coordinate system definition**

* Please state why the three features were chosen. Were they among the smaller features that could be readily identified?
* Invoking three features to define the prime meridian is probably not necessary. First, it is suggested that this will allow at least one feature to be visible in future observations. But the features are all in the same region (and two are right next to each other) so it is not likely to guarantee one of the features will be in future images. More importantly, any future observations are likely to raise more problems than just whether a given feature is visible. Additional data will likely reveal portions of the body that are currently unseen, changing the shape model. If the spin pole is maintained along the principle axis of inertia, this would change the poles of the spin axis, which in turn would change the basic coordinate system. It would be possible to retain the longitude of one of the features, but the other two would change, making them irrelevant.

**Rotation and Shape References**

* Update the first table (with rotation elements and radii) to reference the latest DJ PCK released by the project
<http://naif.jpl.nasa.gov/pub/naif/LUCY/kernels/pck/donaldjohanson_v12.tpc>
and to show the exact rotation constants used in this PCK
* It would be helpful to add the keywords from the PCK below the table, e.g.
BODY20052246\_POLE\_RA = ( 324.66115 0.000 0.000 )
BODY20052246\_POLE\_DEC = ( 50.95721 0.000 0.000 )
BODY20052246\_PM = ( 293.17865 34.409504086 0.000 )
BODY20052246\_LONG\_AXIS = ( 0.0 )
BODY20052246\_RADII = ( 4.4 2.2 1.55 )
with a brief sentence introducing them as SPICE text PCK keywords
* If there is a reference for the shape itself, or how it was made, please include it.
* The precisions of the spin rate in the table (34.409504) and the 251.09 hr period are very different, and should be given to a consistent level. If the period is only known to 2 decimal places, then the precision of the spin rate should be reduced. If the precision of the spin rate is accurate, then the rotation period must be known to better than 2 decimal places and should be given in full.
* In the equation for the orientation, the spin rate is represented by a capital omega, while in the table of parameters, it is given as W1.

**Figures**

* Neither of the three figures is referenced anywhere in the text.
* Please state which LORRI image is draped across the shape in Figures 2 & 3, it is not the same one used to define the coordinate system.
* The longitude coordinates in the table on page 1 are in E longitude. In Figures 2 & 3 they are in W longitude. This may be because the figure was made in the SBMT, which currently only displays the values that way. But, maybe in the caption it could be pointed out that the degrees are different here (there is a W label in the figure, which is good, but text would be helpful). Given that the definitions are given with respect to East longitude, it would be consistent to display the longitude labels using East longitude.
* It would be helpful to show the lon-lat grid on the first image so it is present on all images, or if it is desirable have an image with just the "key features" markings, repeat the first image twice, with and without the grid.
* It would be helpful to circle the three "key features" on the third image so they are present on all images.
* it would be helpful to show X, Y, and Z axes on all images in addition to the lon-lat grid and "key features".
* Is "lor\_0798443290\_04598" the best way to identify the image? What does this string mean? Should this be at least explained?

**Minor liens**

* it would be helpful to add in parentheses after the phrase "epoch of the Lucy encounter" the actual UTC or TDB time that is meant by this, e.g. "epoch of the Lucy encounter (YYYY-MM-DDTHR:MN:SC.### UTC)".
* typo: the abovementioned planetary --> above mentioned

**Other**

* Perhaps not as a lien, but it may be a good idea to use or mention the IAU names (Boxgrove Saxon Boulder (1), Mungo Crater (2), and the (3) Narmada Crater) for the reference points now that they are [officially recognized](https://www.universetoday.com/articles/lucys-main-belt-target-has-its-features-named) by the IAU.