NASA thanks EPA for the opportunity to review and comment on the revised draft assessment of Benzo(a)Pyrene. We reviewed the document in light of the technical content and also considering EPA's commitment to clarity, transparency, and responsiveness, in light of the NAS recommendations for improvements in the IRIS process.

NASA notes that the revised draft provides a clearer, concise format and discussion of the assessment process. NASA also found that several significant technical issues identified in the previous interagency review of the draft assessment were integrated into the expanded set of charge questions, thereby increasing the strength and depth of the planned peer review of the document. EPA's consolidation of key studies and findings into a separate summary also serves as a significant improvement over the previous version. Overall, these improvements supported a more accessible, easily read document, especially when compared to the previous version. NASA commends EPA for taking these basic steps, mirroring some of the specific recommendations identified in previous interagency reviews, as well as, the NAS Report on Formaldehyde.

Below are the summaries of NASA's outstanding issues:

- The revised draft, as in the previous draft, does not provide clear explanation of why Benzo(a)Pyrene serves as the appropriate index chemical for the entire group of chemicals defined as Poly Aromatic Hydrocarbons or PAHs. EPA continues to use references to studies or results on Benzo(a)Pyrene (BAP) interchangeably with discussion of the general group of PAHs. Previous assessments or EPA guidance identifying the rational as to why BAP merits being the index chemical should be referenced for both completeness and consistency. As BAP is most often associated with human exposure through cigarette smoking and eating of charred meats, EPA needs to clarify why this one chemical is the best choice as the index chemical for a diverse set of chemicals in the environment.
- With the extensive body of literature and studies on BAP in recent years, EPA's choice of specific studies with UF of 300 and 3000 continues to raise significant questions as to the appropriateness of the chosen studies as the basis of defined action levels. Documentation of impacts due to inhalation of cigarette smoke, a significant source of humor exposure of BAP, do not factor into this assessment and the RfC is based on a study with the maximum amount of UF generally used at 3000 highlights ongoing questions with EPA's choice of studies as the basis of RfDs and RfCs.

Again, NASA thanks EPA for the opportunity to review and comment on the revised draft. EPA has improved the format, clarity and presentation of data, as well as, including specific outstanding technical and scientific issues into the proposed draft charge questions for peer review. NASA notes that significant technical issues, including the reliance on individual studies that result in very high UF, remain an ongoing concern.