General Comments: This study examined the trend of Earth's albedo using DSCOVR EPIC measurements. The trends derived from EPIC are comparable with those inferred from CERES measurements. Both datasets indicate that Earth's albedo has decreased since 2016, with the rate of decrease becoming larger after 2022. Because the CERES mission has been the sole satellite mission monitoring Earth's energy imbalance, an additional independent mission such as EPIC provides an important means to validate the existing CERES observations. The study addressed the stability of the radiometric calibration of EPIC. However, the EPIC instrument measures only narrowband radiances from a single viewing direction, at wavelengths shorter than 780 nm. Deriving broadband albedo therefore requires angular and spectral integration, which involve assumptions about atmospheric profiles, surface types, and cloud properties.

The purpose of this paper is NOT to validate the numerical values of CERES albedo measurements, but rather to validate the shape of the trend decrease in albedo since 2016. Most of the contribution to Earth's albedo comes in the visible wavelength channels. Decreases in EPIC' visible channel albedos should be similar in shape to CERES changes. EPIC's eight channel narrow band, 317.5 to 780 nm, backscatter irradiance data are not sufficient to be numerically compared to CERES continuous wavelength albedo 300 – 5000 nm at all angles.

The angular integration refers to integration over the viewing angles. The study does not discuss uncertainties associated with these angular or spectral integration steps. In addition, the impact of changing phase angles is not discussed, nor is the methodology for applying phase-angle corrections described in the albedo time series. The effect of the portion of Earth not observed by EPIC also warrants consideration.

EPIC trend estimates in percent per year are based on data from EPIC measured irradiance expressed in counts per second converted into albedo by multiplication by a single constant for each wavelength channel. It is just a change in units. The albedo time series are corrected for the changing phase angle. The purpose of this paper is to estimate the change in % per year in the 317 to 780 nm wavelength channels. To compare trends with CERES, the EPIC channels were added together after being weighted in proportion to the solar spectrum. For estimating trends, the small cyclic variation, 3-6 month periodicity, caused by the small missing portion of the illuminated Earth has no significant effect since it is included in the deseasonlity analysis. The trends are now estimated by two independent methods, MLR and

Lowess, and shown to agree. One of the methods, MLR, Multivariate Linear Regression, also gives error estimates, Fig. 16 and Table 3.

Estimating these uncertainties is crucial for determining whether the detected trends are statistically significant. Given the likely magnitude of these methodological uncertainties relative to the inferred albedo trend, I recommend a major revision before publication in EGUsphere.

Specific Comments: 1. Are there uncertainties in the derived albedo trend associated with the phase-angle shift around 2020? Because the phase angle directly affects the measured bidirectional reflectance, it should influence the estimated Earth albedo. Notably, the timing of the observed change in the albedo trend coincides with this phase-angle transition.

The correction for the observing phase angle, SEV angle, has now been explicitly described in Figs. 4 and 5 along with Table 2.

2. This study evaluates calibration reliability based on two components: (i) the stability of EPIC's narrowband radiometric calibration and (ii) the stability of the lunar albedo under viewing geometries consistent with previous studies. These assessments support the stability of EPIC's narrowband radiance accuracy, but they do not validate the accuracy of the angularly and spectrally integrated fluxes or albedo. The uncertainties associated with the methods used for angular and spectral integration should be discussed.

As mentioned earlier, this paper is not trying to validate the magnitude of the CERES albedo measurement, but to show that both data sets indicate a reduction in Earth reflectivity. The EPIC measurement relies on the decrease in the global average of observed counts per second (backscattered irradiance) for the illuminated Earth in a 24-hour period. The change mostly comes from decreases in cloud reflectivity as confirmed by the larger decreases in the O_2 B- and A-bands.

3. This study cites Su et al. (2018) and Penttilä et al. (2022); however, it appears that a different approach to the angular and spectral integration was used here. If so, please clarify the differences and justify the choice of the new method. (**See comment above)**

4. Line 179: “EPIC multiplicative albedo calibration coefficients (Table 1) are used to convert counts per second into top-of-atmosphere Lambertian albedo Aλ = πIλ/Sλ where Iλ = the outgoing radiance at the top of the atmosphere and Sλ is the incoming corresponding solar flux.” The radiance measurements in this study were converted to albedo by assuming a Lambertian surface. However, this assumption is rarely realistic in practical applications. When anisotropy is not accounted for, the resulting Lambertian albedo becomes highly sensitive to the viewing geometry. The uncertainties associated with this approach should therefore be discussed.

The measurement in terms of Lambertian albedo is just a change in units from counts per second. The trends in percent per year are identical. The true anisotropic albedo changes that CERES attempts to model should be proportionate to the measured SEV corrected changes in counts per second from EPIC. EPIC measures the changes from cloud cover and surface reflectivity from sunrise to sunset, which is different than from CERES.

5. Line 241-242: “The albedo estimates for these channels, 687.75 ± 0.2 and 768 ± 0.2 nm are much lower (Fig. 7) than for surrounding non-O2 absorbed wavelength channels. “ This result indicates that the spectral integration is highly sensitive to atmospheric and surface conditions, especially cloud conditions for O_2-absorbing bands. Without characterizing atmospheric and surface properties, it is difficult to derive broadband quantities from narrowband measurements. How was this accounted for in the study? Simply weighting by the solar flux is not sufficient to obtain a physically meaningful broadband albedo.

The paper is not trying to determine the accurate broadband albedo, but just the summed narrow band albedo that behaves in a similar long-term manner to the CERES broadband albedo trend that is dominated by the visible wavelengths.

For example, trends in water vapor, cloud, and surface characteristics produce different spectral signatures in albedo. When TOA albedo changes in the visible and near-infrared spectral ranges are not aligned, how can this be considered? With the current method, these spectral signatures would not be captured, potentially leading to biases in the inferred broadband albedo. By excluding the O_2-absorbing band and averaging, the results may partially reflect albedo changes under cloud-free conditions. If the global trend is primarily driven by clear-sky factors, such as surface albedo, this approach might capture the corresponding global changes.

The albedo change is driven by long-term average decreases in cloud amount or cloud height as suggested by the larger decreases in O_2 B- and A-band channels 688 and 764 nm, Fig. 16, compared to their adjacent channels 680 and 780 nm.

6. Line 143: "corrected for a small missing portion of the Earth's surface not seen in each EPIC image (3 to 8%) depending on EPIC's orbital position." How was the unseen portion of Earth accounted for in calculating the albedo? If the extent of this unseen portion varies, would such variations affect the albedo time series? Please provide the uncertainty ranges in the albedo estimates associated with changes in the missing portions.

The missing small portions of the Earth's limb produce a small periodic perturbation in EPIC's measured Counts/second that is corrected in the deseasonlity calculation and does not affect trends in albedo.

The referees' thoughtful comments have caused us to rewrite most of the paper with some major changes. We now include an additional year's worth of data for both EPIC and CERES, we show the time series, slopes of the Lowess fits, and the formal MLR trend analysis with error estimates for each EPIC wavelength band as well as the summation of the solar flux and FWHM weighted time series. The trend analysis is now also performed on deseasonalized time series. We have added explicit corrections for the changing observing angle of EPIC from the Earth 12.36^{o} to 2^{o}. Major text changes are marked in green.