Precambrian basement in Western US Cordillera, Precambrian Basins of western U.S., Cambrian Basins of Western U.S., Regional structural geology of the western U.S., Magnetism and tectonism of the Basin and Range.

**Paper details:**

Background (6 pages plus figures) 1. Precambrian basement. What are the distribution and ages of Precambrian crystalline basement terranes in the Western US Cordillera? Refer to Burchfield et al (1992) and Dickinson (2006). The latter provides a very nice example of a tectonostratigraphic diagram. 2. Precambrian basins. What units (Groups, Formations) comprise the Precambrian stratigraphy of the Western US. In what tectonic setting and sedimentary environment where they deposited? Refer to Burchfiel et al. (1992) and Smith et al. (2019). Restrict your focus to basins in the southwestern US 3. Cambrian basins What units ( Formations) comprise the Cambrian stratigraphy of the Western US. In what tectonic setting and sedimentary environment where they deposited? Smith et al. (2019) provide a good overview of the Death Valley and White-Inyo stratigraphic section. Mount and Bergk (1998) is more regionally synoptic. Make sure to discuss the depositional setting margin-wide a deeper focus on the White-Inyos will occur later in your report. 4. Regional structural geology. Describe the five major Phanerozoic orogenic events that have impacted the Western US Cordillera. Be sure to cite the names ages of the allochthonous (upper plate of thrust) and autochthonous (lower plate) units involved in these orogenies and their ages. Describe the structural trends (use Burchfiel et al.(1992), Dickinson (2006), Dunne et al. (1978), Morgan and Law (1998), and Burchfiel and Royden (1991) 5. Magmatism. Focus principally on Mesozoic magmatism in the White-Inyo and Sierra Nevada, including temporal-spatial trends in magma composition and tectonic/structural setting. A short description of the Magmatism in the Basin and Range will be useful (use Burchfiel et al. (1992), Dickinson (2006), Chen and Moore (1982), Carl and Glazer (2002), Coleman et al. (2003)). 6. Basin and Range. Briefly describe the magmatism and tectonism in the Basin and Range. This is important for setting the stage for transition for more east-west extension to northwest-southeast transtension in the Eastern California Shear Zone