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Utilizing Fractionated Space Mission Design and Small Satellites for a Next Generation Gamma Ray Burst Observatory RASHIED AMINI, Washington University in St. Louis — Since the discovery of Gamma Ray Bursts (GRBs) by the Vela satellite, the field of GRB astronomy has been rapidly evolving in order to explain the most catastrophic event in the universe. Missions over the last two decades have pinpointed GRBs as extragalactic sources as well as shed insight on their nature. NASA's recent SWIFT mission provides a platform for multiwavelength analysis of GRBs and their afterglow as well as transmitting GRB position data to other observatories. A future mission can compliment SWIFT's array of multiwavelength instrumentation as well as providing more rapid and precise GRB position data. A fractionated, small satellite mission can utilize the small scale of nanosatellites to rapidly slew to a GRB target and then use stereoscopic observation and long baselines to further pinpoint the GRB position. A fractionated mission design places various scientific instrumentation as the primary payload on each individual satellite, providing robust performance and a greater field of view by decentralization. Additionally, future space interferometry missions will employ formation flying and fractionated design; a fractionated, small satellite mission will provide a cost effective proof of concept while providing valuable data to the scientific community.

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