

Abstract Submitted
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The **Advanced**
Gamma-ray Imaging System (AGIS): Schwarzschild-Couder (SC) Tele-
scope Mechanical and Optical System Design V. GUARINO, V. VASSILIEV,
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P. KAARET, A. KONOPELKO, H. KRAWCZYNSKI, F. KRENNRICH, R. RO-
MANI, R. WAGNER, M. WOODS, AGIS COLLABORATION — The concept of a
future ground-based gamma-ray observatory, AGIS, in the energy range 20 GeV to
200 TeV is based on an array of 50-100 imaging atmospheric Cherenkov telescopes
(IACTs). The anticipated improvement of AGIS sensitivity, angular resolution, and
reliability of operation imposes demanding technological and cost requirements on
the design of IACTs. In this submission, we focus on the optical and mechanical sys-
tems for a novel Schwarzschild-Couder two-mirror aplanatic optical system originally
proposed by Schwarzschild. Emerging new mirror production technologies based on
replication processes, such as cold and hot glass slumping, cured CFRP, and electro-
forming, provide new opportunities for cost effective solutions for the design of the
optical system. We explore capabilities of these mirror fabrication methods for the
AGIS project and alignment methods for optical systems. We also study a mechani-
cal structure which will provide support points for mirrors and camera design driven
by the requirement of minimizing the deflections of the mirror support structures.

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