Phase 1: The Guinea Pig

Liquid-fueled suborbital test rocket on the Big Piggy engine.

Mission 001 target window: late 2027, from the FAR launch site in Mojave, California.

DESIGN VALUES AND TARGETS - NOT ACHIEVED FLIGHT RESULTS

Height	8.35 m
Diameter	30.48 cm
Propellant	RP-1 / LOX
Wet / dry mass	600 kg / 300 kg
Apogee	100 km minimum, ~150 km goal
Simulated apogee	112.9 km (103 to 124.2 km)
Burnout velocity	4,961 km/h (Mach 4.67)
Sea-level thrust	23.67 kN
Chamber pressure	40.4 bar
Specific impulse (avg / vac)	265 s / 299.8 s
Burn time target	30.0 s
Total impulse target	781,930 N s
Peak mass flow target	10 kg/s

Source and status

Figures from stellaraero.us, updated November 2026.

Published figures are not independently validated engineering values or flight results.

The current program uses pressure-fed RP-1 / LOX propulsion and parachute recovery.

Simulation: rocket_BEST_MODEL_YET.py, Nov 2026. Phases 2 (Spark) and 3 (Lightning) follow.

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