(a) GeoProbe | Real Object Motion

Track the green-handled glass jug relative to the table.



View 1



View 2

Model	Direction / cm
GPT-6 Astra	right / 2
GPT-6 Sol	right / 2
Fable 5.1	right / 4
Gemini 3.8 Flash	none / 0
Qwen 3.8 Max	right / 3
Qwen 3.5 397B	none / 0
Qwen 3.5 27B	left / 7
Opus 5.5	right / 2.5
DeepSeek-1017	up-right / 4

Reference: right, 2 cm

(b) GeoProbe | Camera Translation

Estimate camera B’s position in the coordinate frame of camera A.



View 1



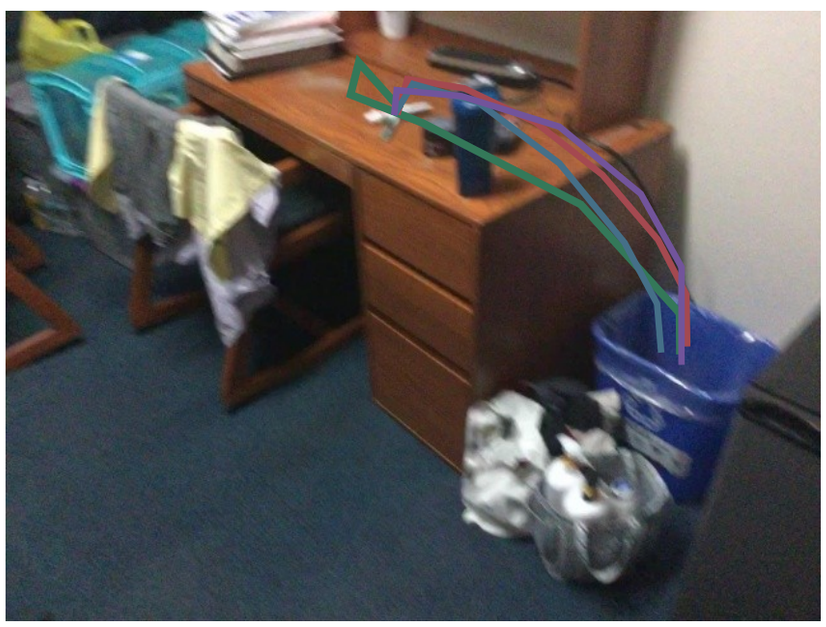
View 2

Model	Translation (cm)
GPT-6 Astra	[8, 0, -10]
GPT-6 Sol	[10, -10, 0]
Fable 5.1	[6, -3, 0]
Gemini 3.8 Flash	[25, 12, 0]
Qwen 3.8 Max	[10, 4, 0]
Qwen 3.5 397B	[15, 8, 5]
Qwen 3.5 27B	[8, 3, -12]
Opus 5.5	[15, -5, 0]
DeepSeek-1017	[6, -5, 12]

Reference translation: [12, 9, 0] cm

(c) TraceSpatial | 3D Trajectory

Predict a trajectory from the toothpaste to the blue waste bin.



GT Astra Fable Opus 5.5

Image projection of 3D paths

Model	3D Fréchet (m)
GPT-6 Astra	0.525
GPT-6 Sol	0.634
Fable 5.1	0.826
Gemini 3.8 Flash	1.148
Qwen 3.8 Max	0.699
Qwen 3.5 397B	0.715
Qwen 3.5 27B	0.497
Opus 5.5	0.549
DeepSeek-1017	0.556