VERY, VERY BASIC PHYSICS, MATH AND ...

LANDING ON A COMET

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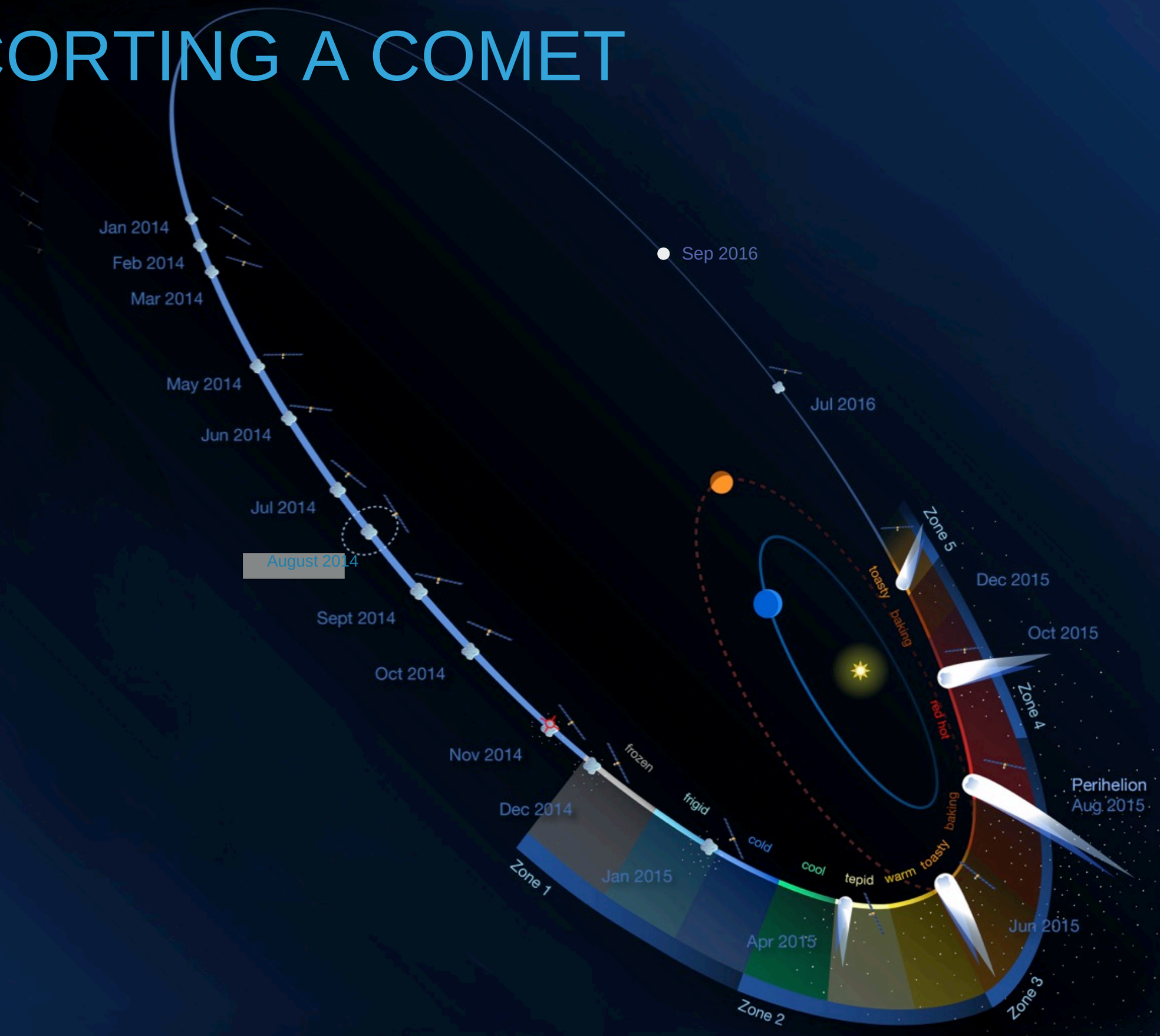
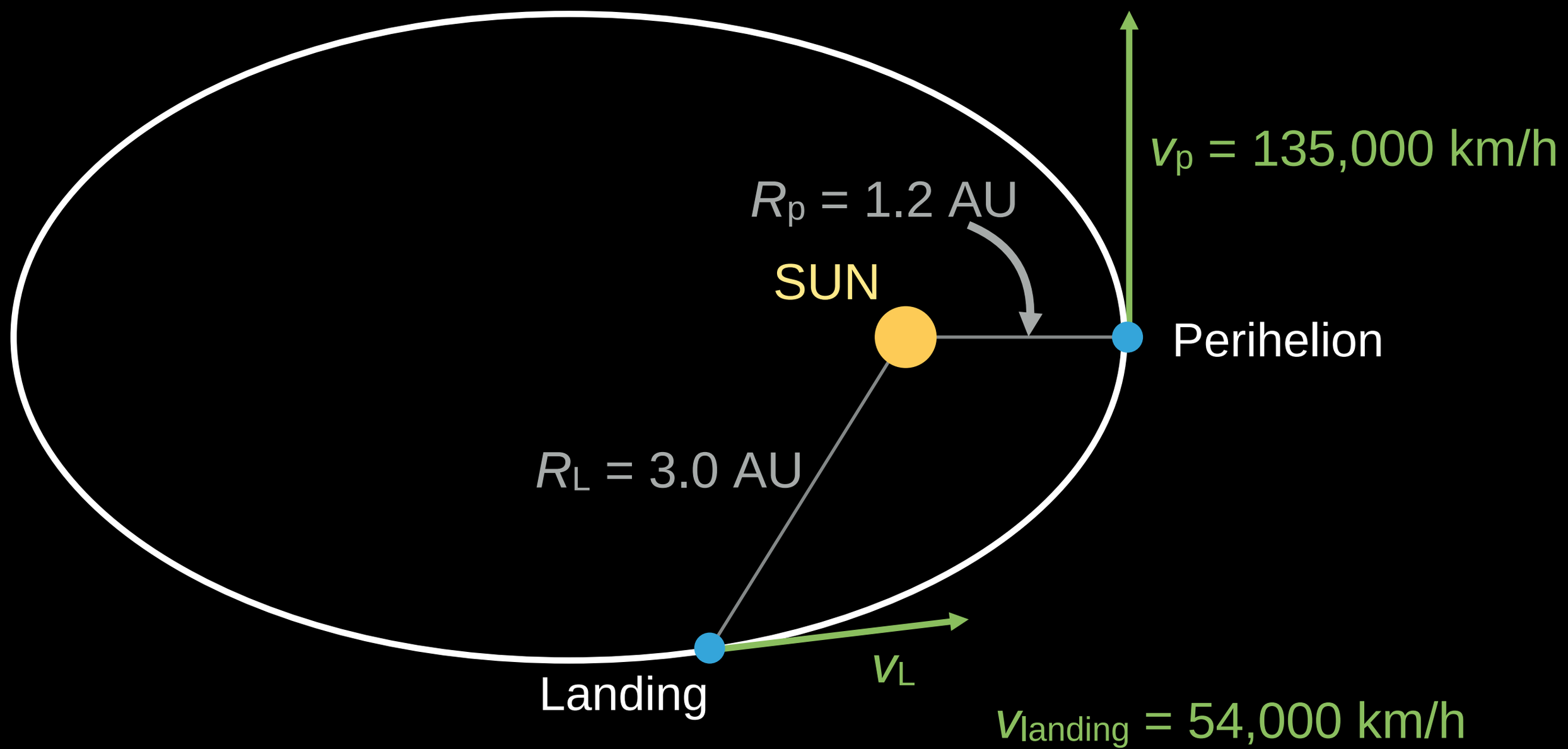
ESCORTING A COMET



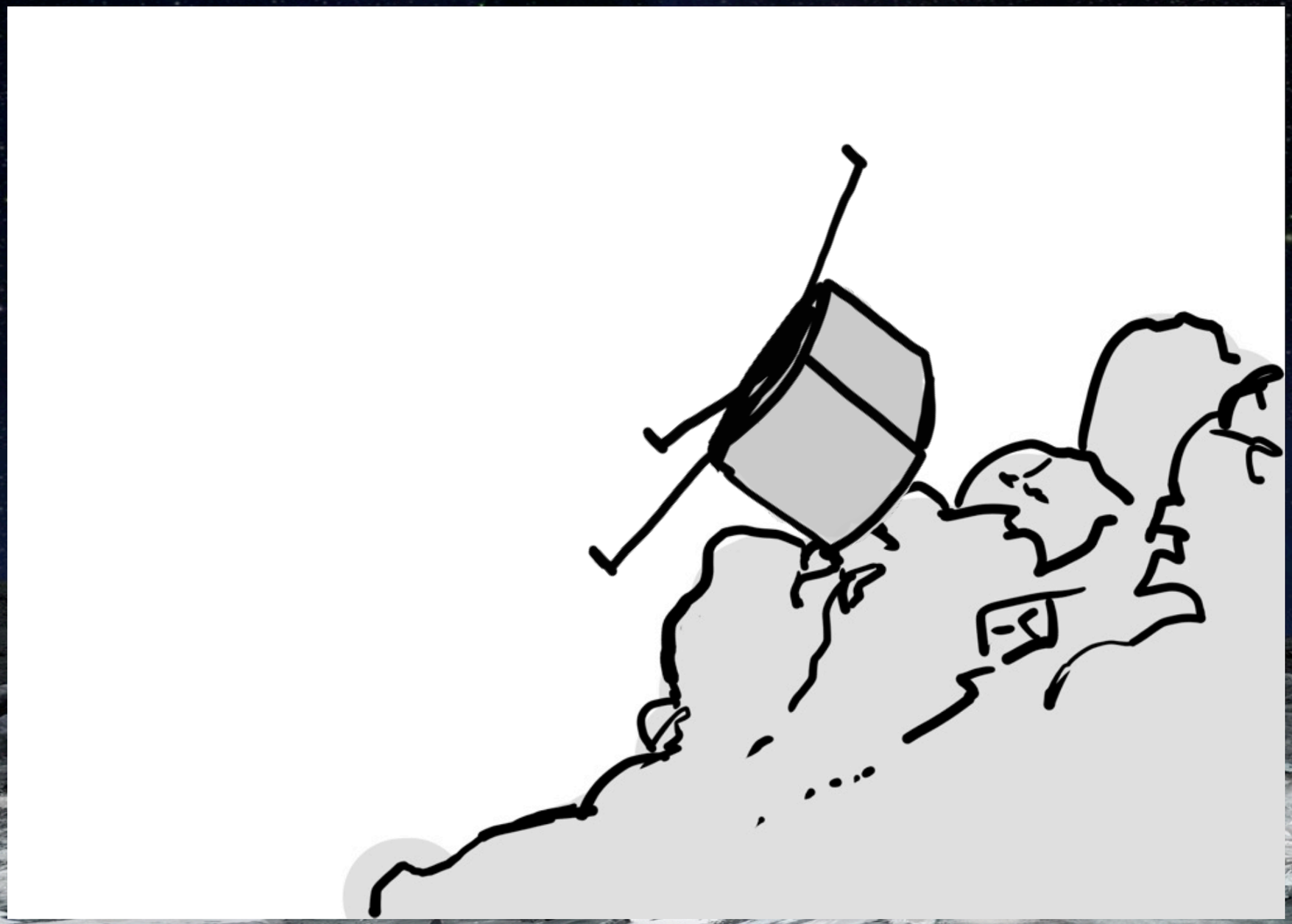
Credit: NASA/JPL Caltech

CONSERVATION OF ANGULAR MOMENTUM

- $mv_L R_L = mv_p R_p$

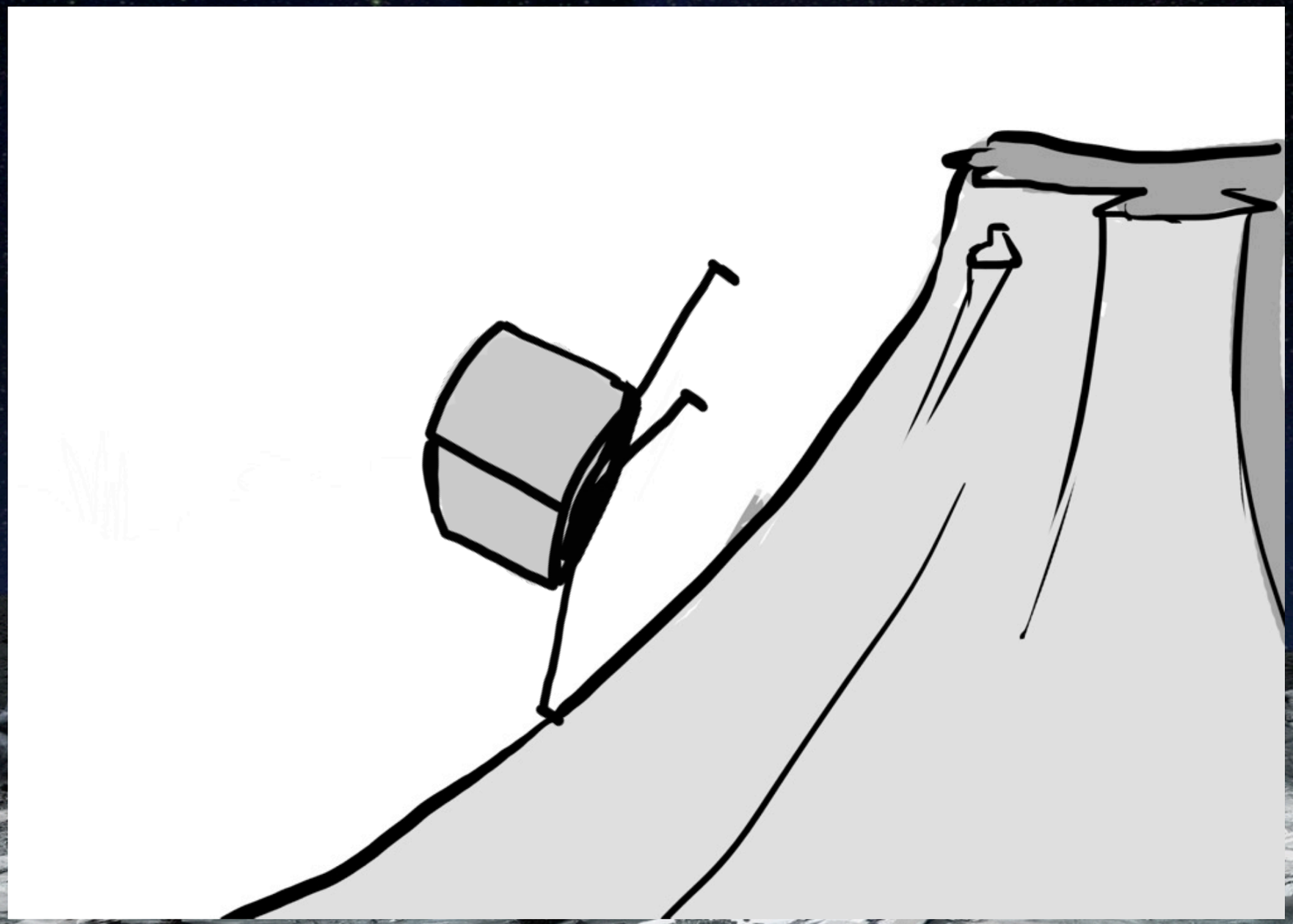


DON’T HIT THE BOULDERS!



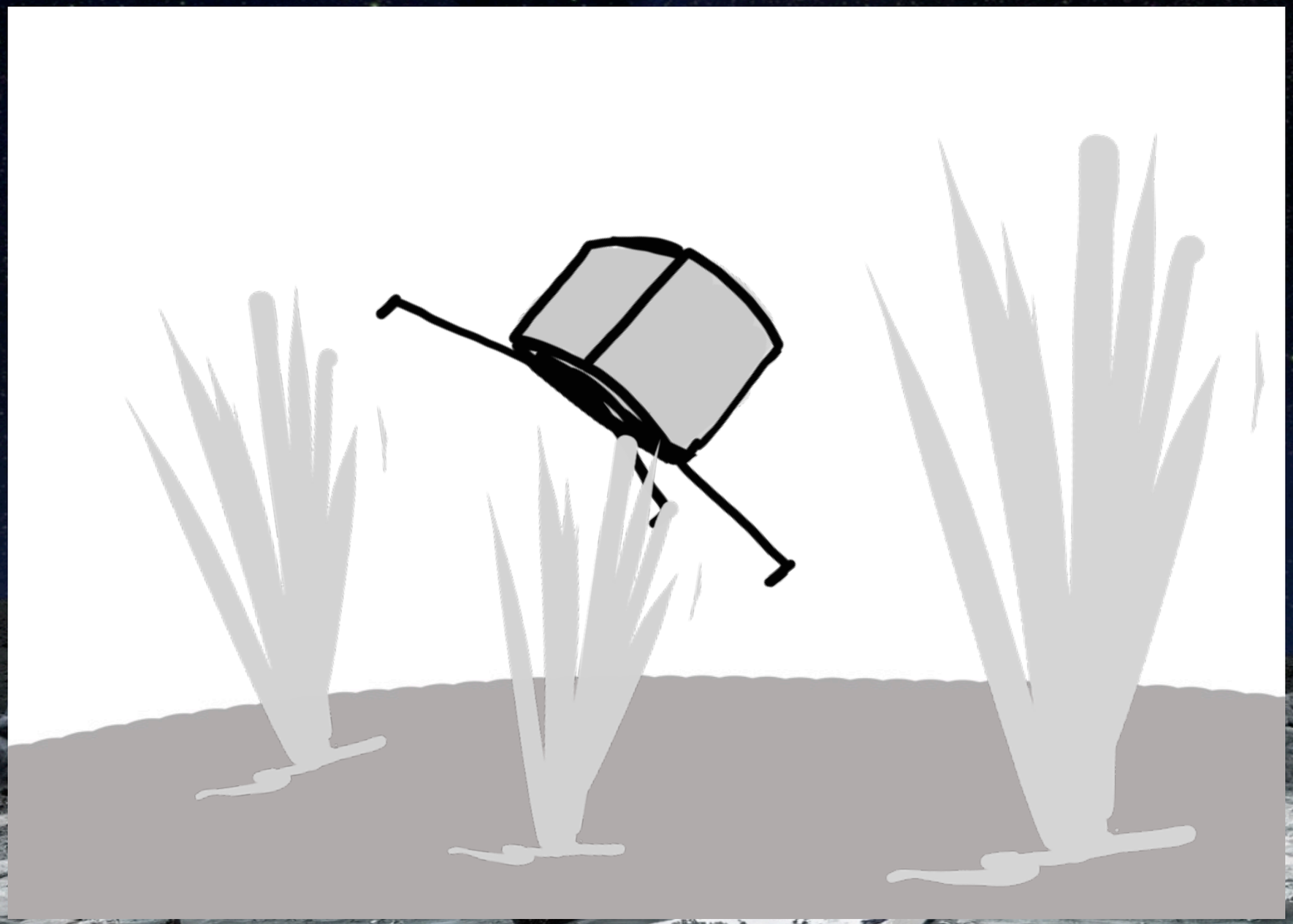
Credit: NASA/JPL Caltech

WATCH OUT FOR SLOPES!



Credit: NASA/JPL Caltech

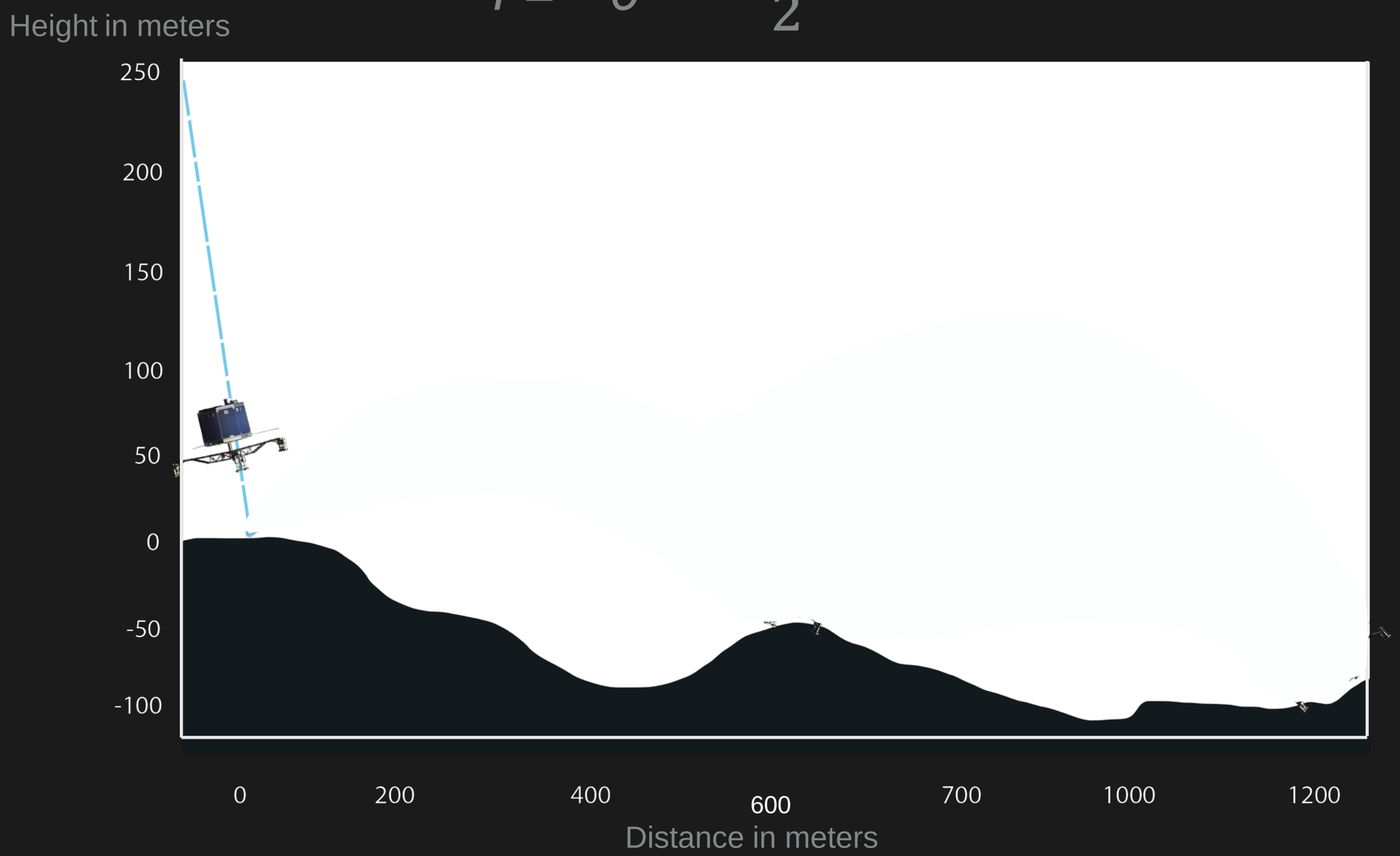
DON’T LAND ON A JET!



Credit: NASA/JPL Caltech

PROJECTILE MOTION OF PHILAE LANDER ON 67P

- $X_{f} = v_0 t + \frac{1}{2} a t^2$



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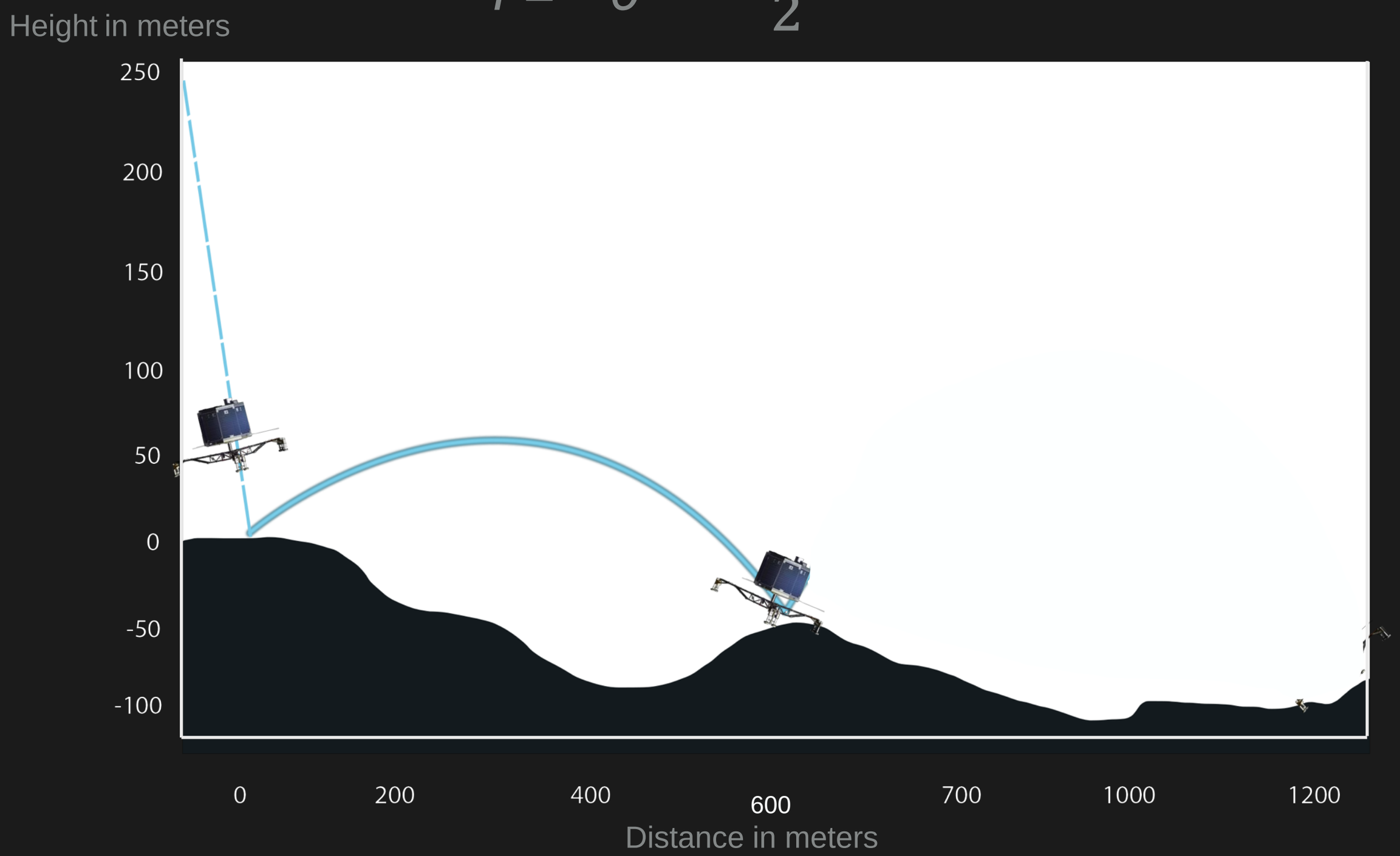

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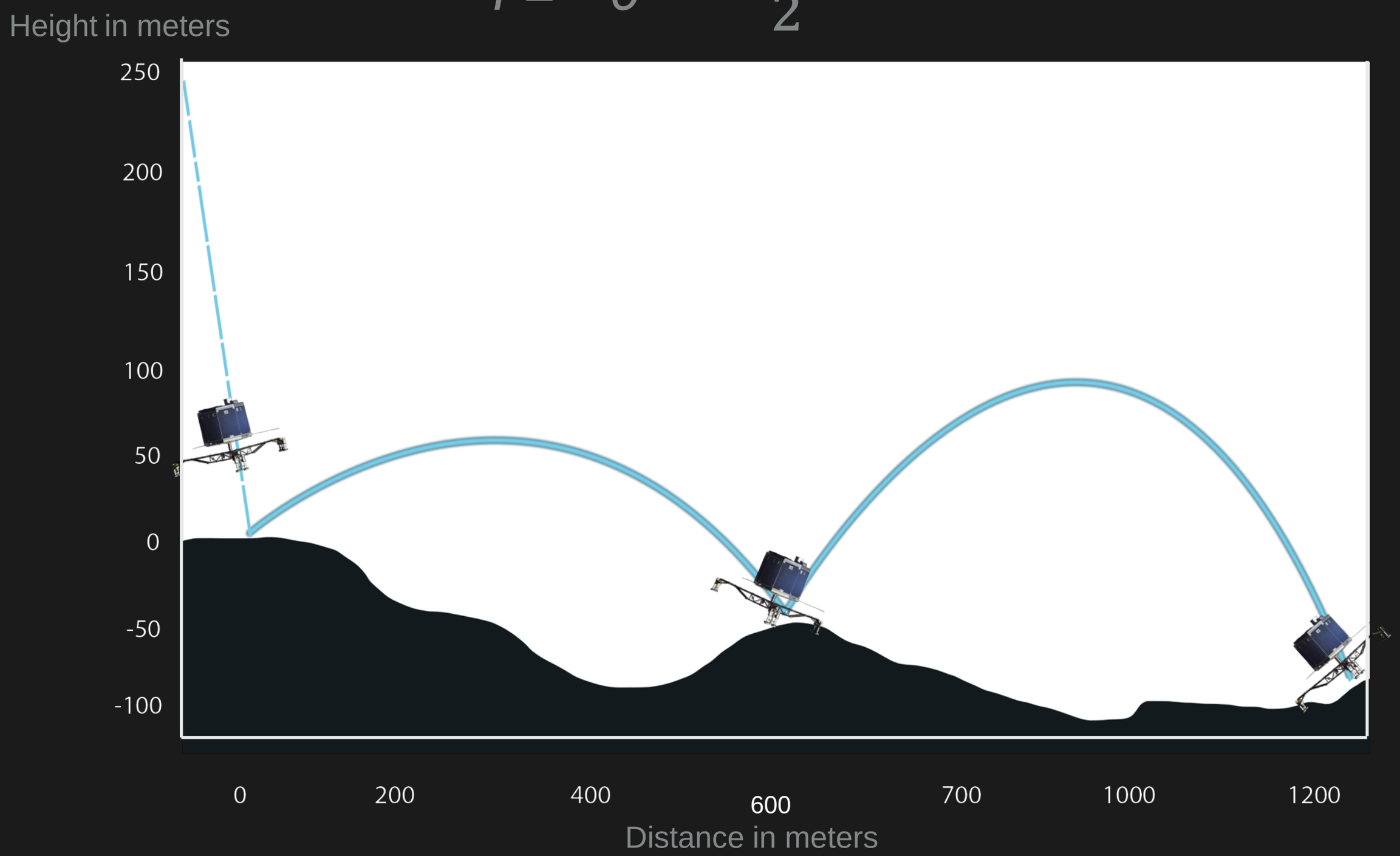
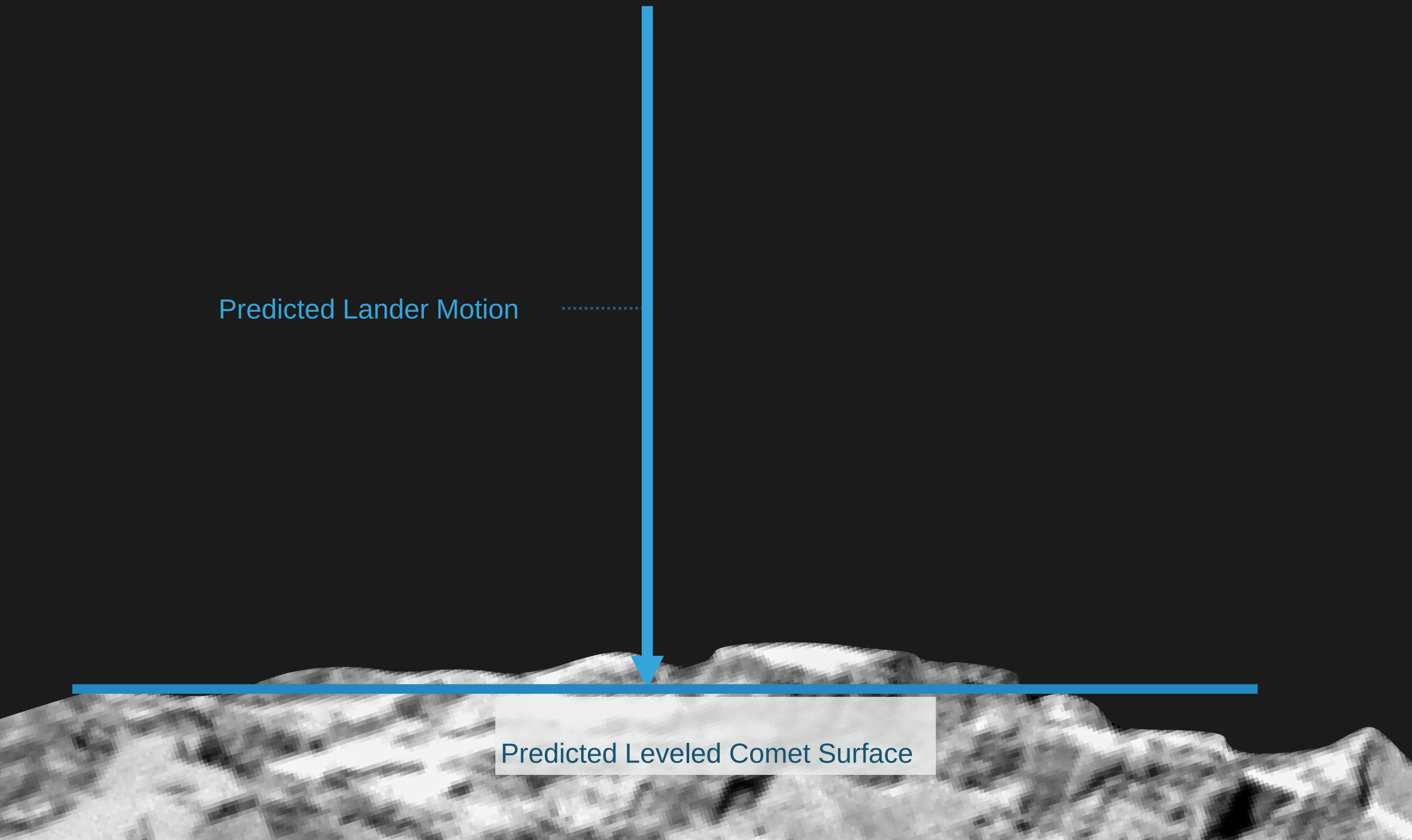


THE LANDING

KINEMATICS



THE LANDING

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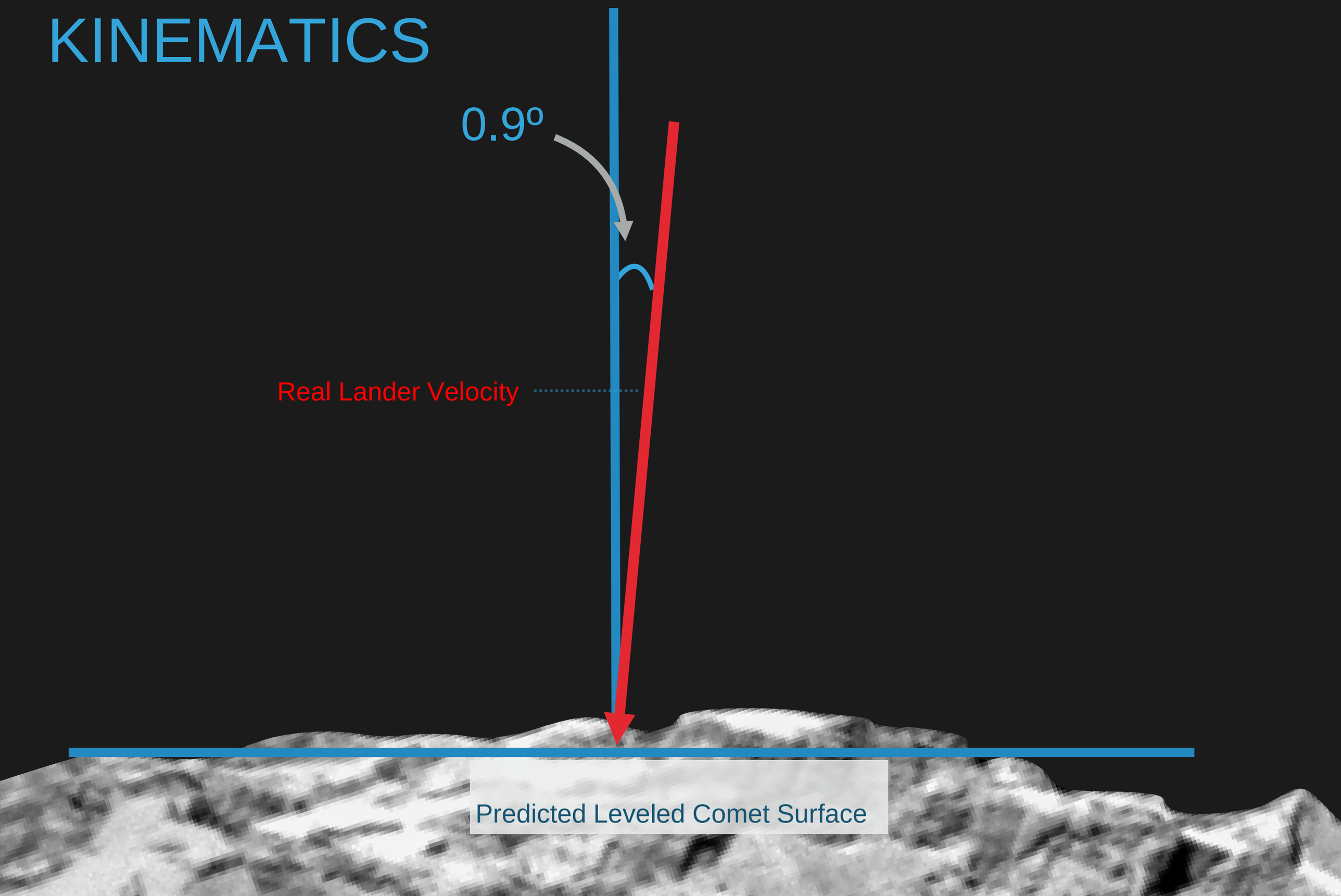

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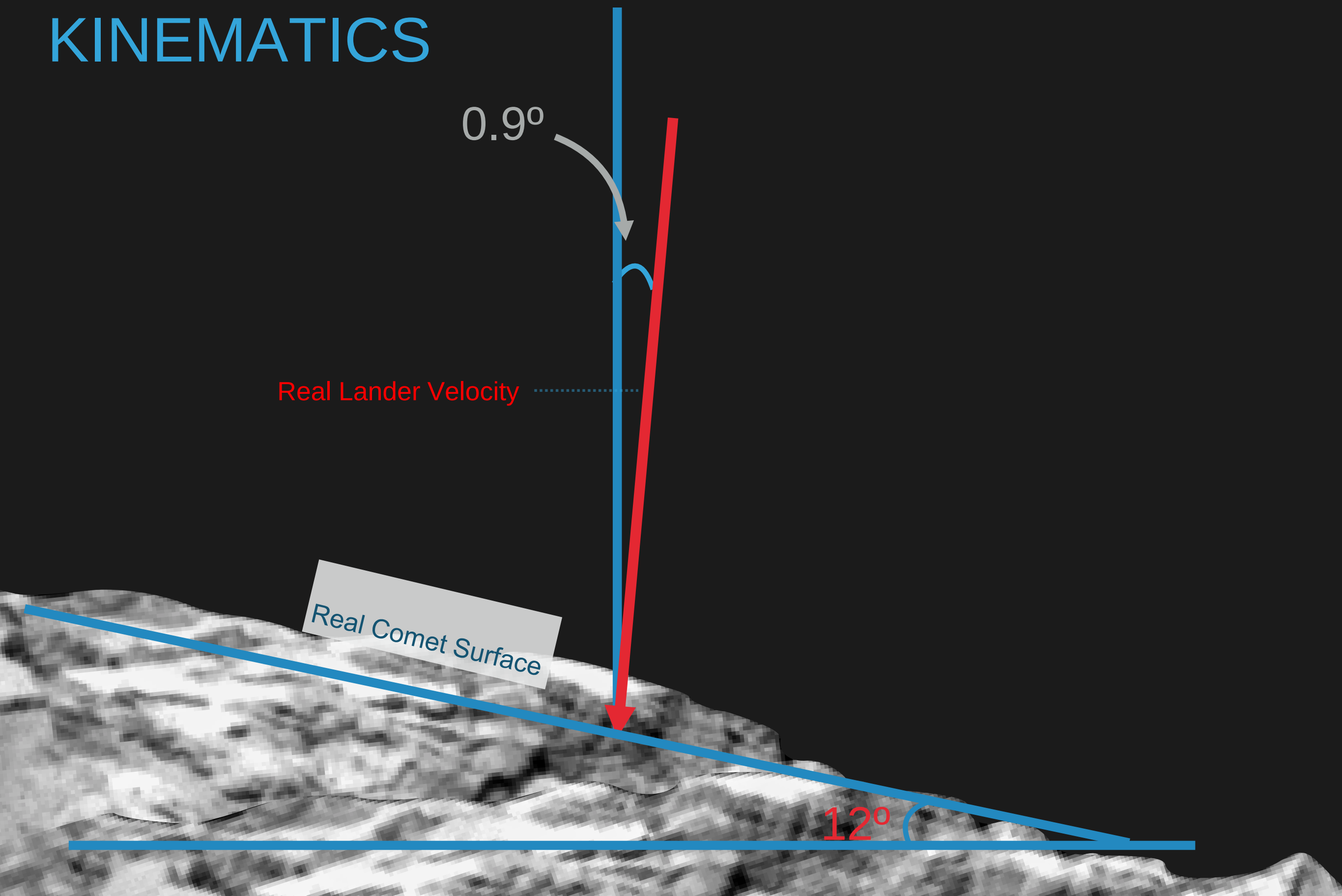

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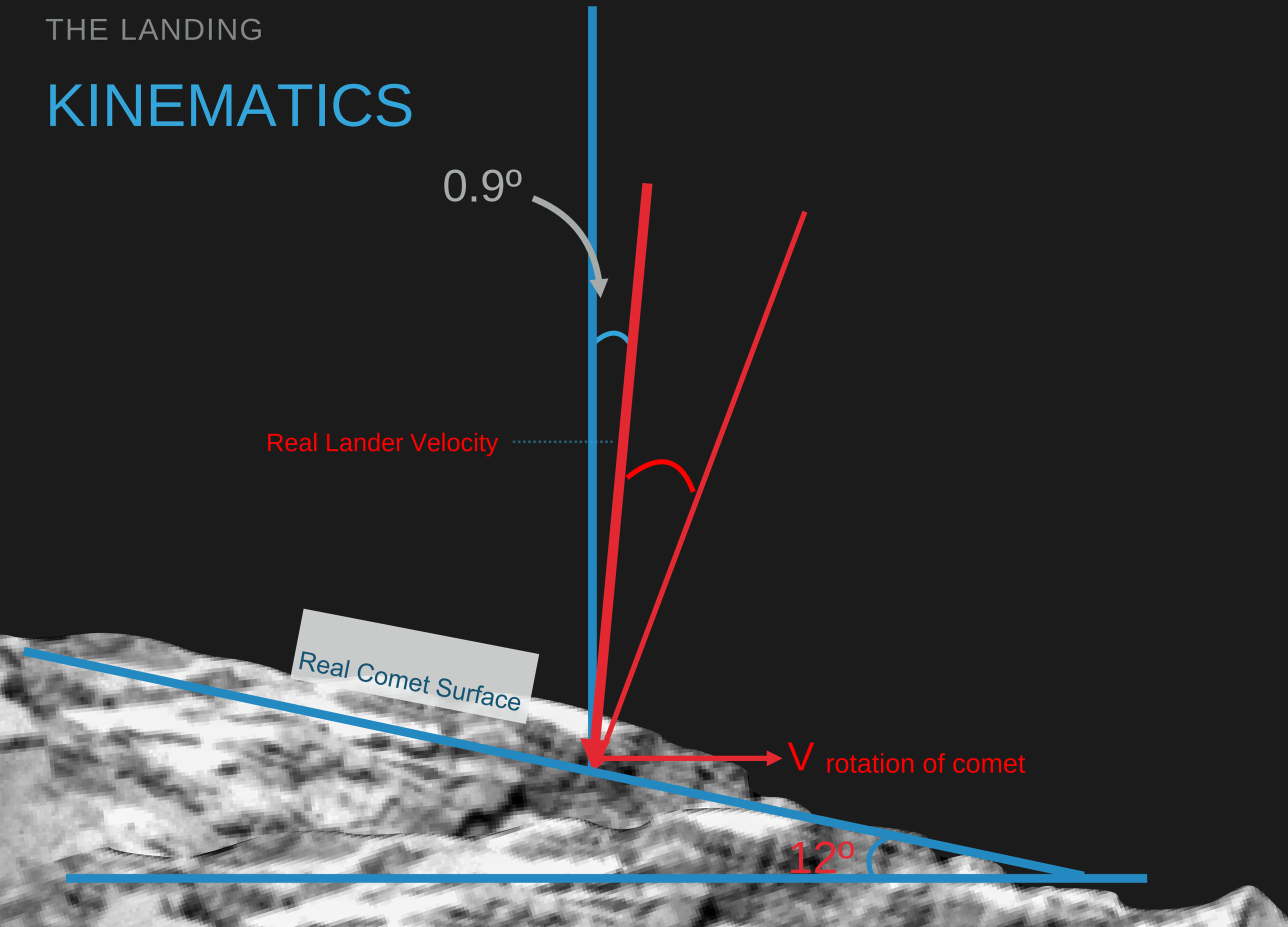

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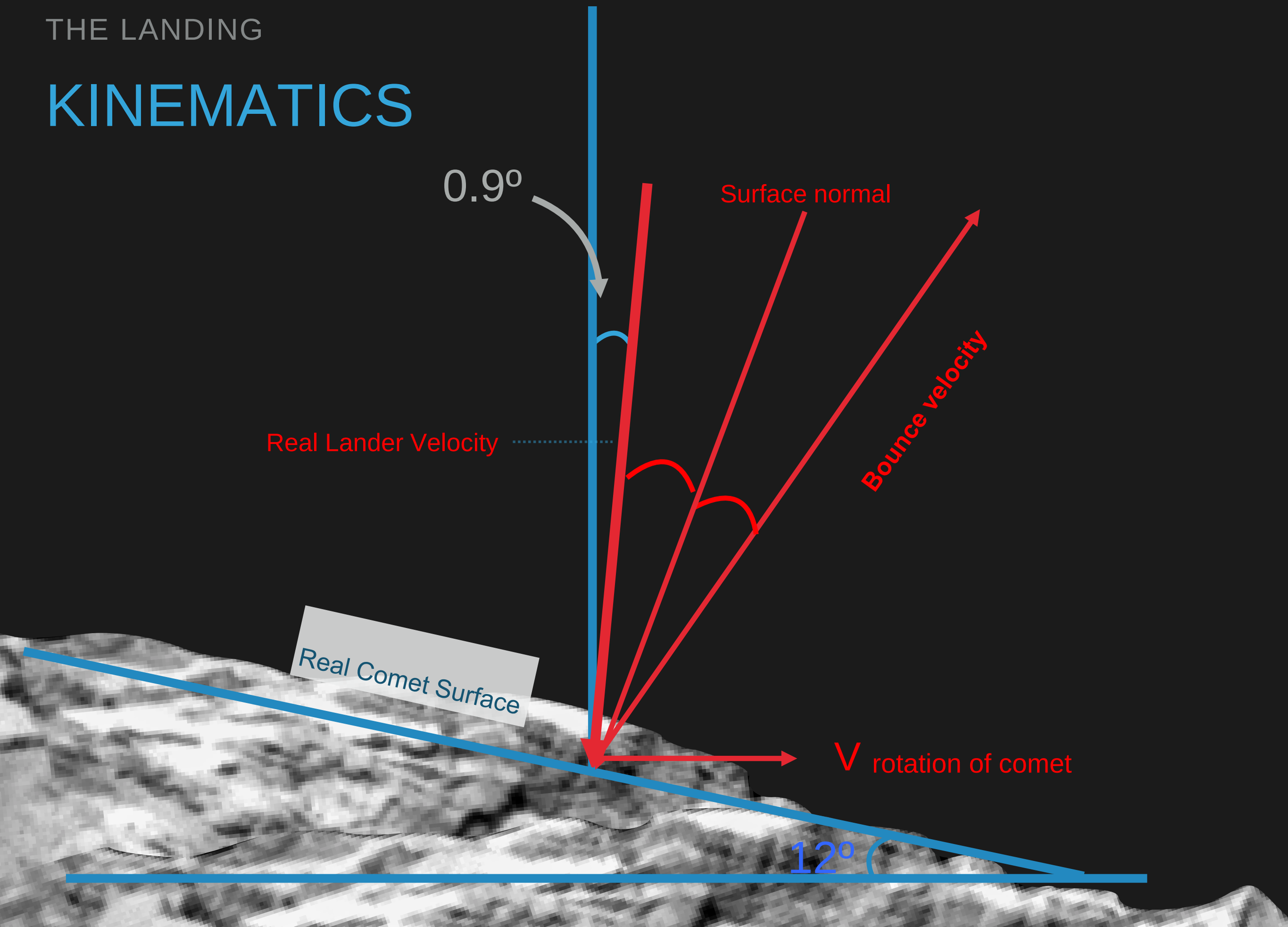

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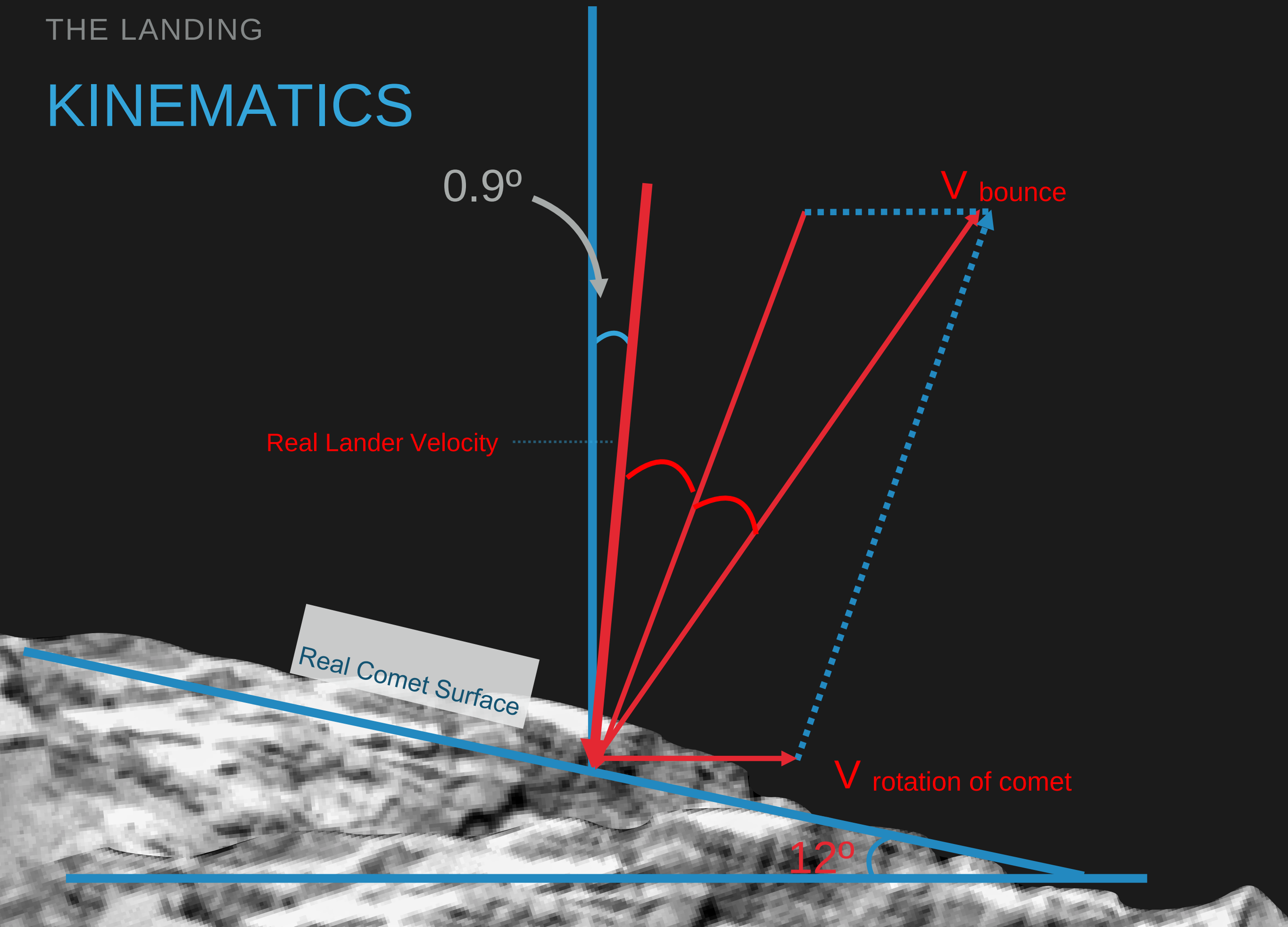

CONSERVATION OF ENERGY

- $E_{\text{landing}} = E_{\text{abs}} + E_{\text{friction}} + E_{\text{dust}} + E_{\text{bounce}}$

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- $E_{\text{landing}} = E_{\text{abs}} + E_{\text{friction}} + E_{\text{dust}} + E_{bounce}$

59 J	21J	20 J	12 J	5 J

CONCLUSION

The students should UNDERSTAND the basics of physics.

Some day this understanding may make the difference between crashing and landing on a comet!

Thank you for listening and thank for working hard every day to prevent crashes!