MAKING IT TO THE SUMMIT INTACT WITHOUT TOO MUCH DRAMA

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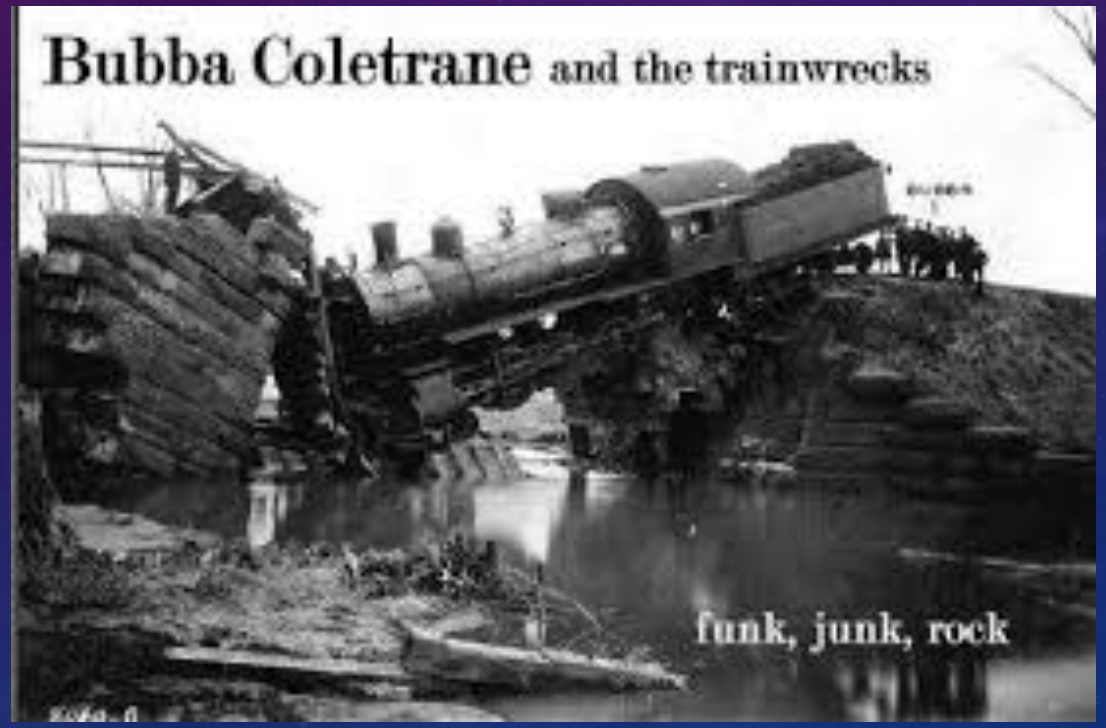
THE PROBLEM: HOW TO GET FROM THE TUCSON URBAN ENVIRONMENT TO AN OBSERVATORY WITHOUT BEING HURT OR TRAUMATIZED.

Four destinations are most relevant to Steward Observatory:

- Kitt Peak
- The Santa Catalina Mountains (Mt. Lemmon & Mt. Bigelow)
- Mt. Hopkins
- Mt. Graham

The personnel taking care of the various telescopes have an enormous amount of experience driving these mountain roads since this task is often daily. They are a great resource for advice on safety.

THE GOAL: TO AVOID “TRAIN” WRECKS.



THE SOLUTIONS: PRECISION AND ACCURACY!

	Accurate	Inaccurate (systematic error)
Precise		
Imprecise (reproducibility error)		

STRATEGY: KEEP YOUR LANE – *PRECISELY AND ACCURATELY*.

- Keep your tires on the correct side of the ADOT lines ***AT ALL TIMES***.
- Do not be sloppy. Do not cut the corners.
- Try not to crowd either lane marking.

Consciously driving so as to not touch the lines regulates your speed and keeps you engaged in the task at hand.

CORRECT

INCORRECT

ONE CAN GET PRETTY GOOD AT KEEPING WITHIN THE LINES AND STILL GO FAST. HOWEVER, THERE ARE OTHER SPEED-REGULATING FACTORS TO CONSIDER.

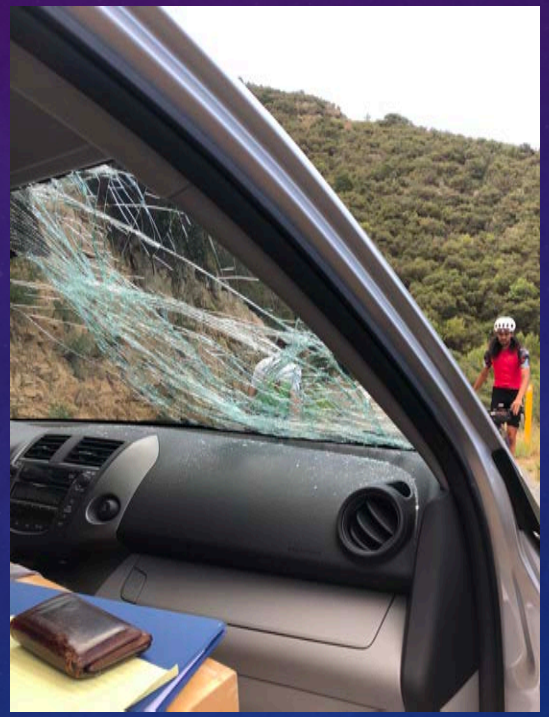
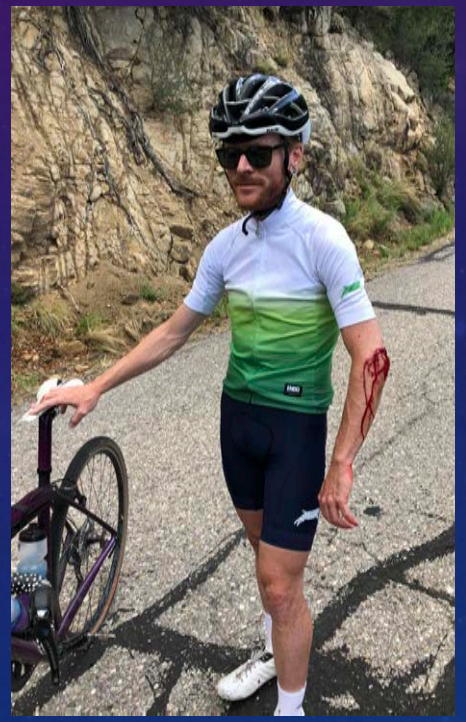
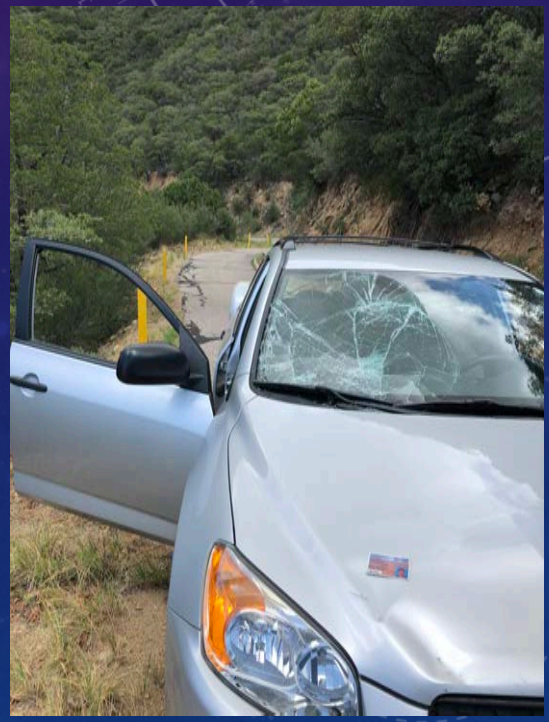
Curves restrict visibility on the road, meaning that we are often giving up a lot of reaction time. If another driver, cyclist, or pedestrian makes a mistake, there may not be much that you can do if you are going fast.

There are also “objective” threats that one typically doesn’t see often away from the mountains. Coming around a blind curve, you may be suddenly confronted with some of these.

THINGS HAPPEN…

- ”Interaction” with bicyclist in July 2018 on the Mt. Hopkins forest road above SAO/MMT gate.



”Experiment” showed that bicyclist can create/absorb $1800 worth of damage to a vehicle (not including the windshield) and not seek *ANY* medical attention.

NIGHT VS. DAY

- At night, there is an advantage of knowing there is another vehicle around a blind corner by virtue of its headlights.
- All other risks are greatly enhanced.
- Make sure that you have some warm clothes with you as it can get fairly cool at night even during parts of the summer.
- Have a flashlight.
- Always remember that cellphone coverage may be poor or nonexistent.

WINTER VS. NOT WINTER

- Absolutely required to have all-wheel or 4-wheel drive (and/or tire chains) for driving in the mountains in the winter.
- Snowy and icy conditions shortens reaction time dramatically.
- Watch your speed carefully so that you need not rely on brakes. How fast your braking will actually bring you to a stop is much more unpredictable when road conditions are poor.
- Make sure that you have warm clothing, winter boots, gloves, flashlight, etc. with you in case progress on the road becomes impossible.
- Research the weather forecast before heading into the highlands.

BAD WEATHER VS. GOOD

- Visibility is key. Storms and fog limit visibility, shortening reaction time.
- During and after storms are prime time for having dangerous debris in the road.

REACH YOUR DESTINATION BOTH PHYSICALLY AND MENTALLY* INTACT

- Ready to work, do astronomy, enjoy the spectacular scenery, etc., not recovering from near misses and the realization that you were lucky.
- Try not to get distracted during the trip. Avoid all of the usual distractions *plus* try not to get distracted by the scenery.
- Do not be pressured to go faster by the traffic following you. Be polite (prevent possible road rage) and use passing/parking cutouts to let faster traffic by you and then continue at a pace that you are comfortable with.
- Don’t touch the lines!!!

* It is too late for me.