Twitter Thread by chrislintott



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At the #AAS237 conference yesterday I went to a panel discussion on the effect of large constellations of satellites on astronomy from the ground. The thousands of satellites @spacex and others want to launch are a serious problem. 1/n

@SpaceX The launch of so many satellites might change the appearance of the night sky for ever and the trails they leave in astronomers' cameras and the potential for interference with radio telescopes are serious problems 2/n

@SpaceX Those problems are particularly acute for those searching for near-Earth or threatening asteroids, for example, though any large survey of the sky is affected. 3/n

@SpaceX It was good to see @spacex, Amazon's Kuiper project and @oneweb present, and to hear that the latter have dropped their plans from more than 40,000 satellites to 'only' 6372. All the speakers were positive about working together. 4/n

@SpaceX @OneWeb And a lot has been done. All three companies talked about making sure their satellites were fainter than 7th magnitude soon after launch, which would make them invisible to the naked eye and avoid the worst problems for large surveys 5/n

@SpaceX @OneWeb .@spacex satellites launched since August have had sunshields to reduce their brightness, and they change orientation en route to their orbit, which is all good. It was encouraging to hear other companies talking about similar measures. 6/n

@SpaceX @OneWeb But. I remain very concerned. Firstly, we're essentially relying on good will - for these companies to spend their money reducing our problems. No regulation yet compels them to do so and any new operators could ignore astronomy. 7/n

@SpaceX @OneWeb On top of that, all three commercial speakers had latched on to 'mag 7' as a target. Yet, as Tony Tyson from @VRubinObs reminded us, at that brightness a satellite is 40 million times brighter than a typical galaxy in the survey 8/n

@SpaceX @OneWeb @VRubinObs Making up for the presence of thousands of satellites at that sort of brightness probably doesn't mean clever programming or statistical tricks, though they will help. It means running one's survey for longer to get the same scientific return. 9/n

@SpaceX @OneWeb @VRubinObs That means more money will be needed for operations, analysis - and for the staff to do these things. 10/n

@SpaceX @OneWeb @VRubinObs For big projects like @VRubinObs, that means an additional cost of millions of dollars. For smaller projects, which are cash strapped, it means finding funds to pay postdocs and students to keep the show on the road. 11/n

@SpaceX @OneWeb @VRubinObs As this is a cost on the research community caused by commercial entities I asked whether anyone had thought about mitigating it. There was - literally - silence from the commercial reps. 12/n

@SpaceX @OneWeb @VRubinObs It's great that they're taking actions to reduce the effect of their satellites. But if they want to be viewed as collaborators in our science, they should pay to fix the problems they're about to cause. 13/n

@SpaceX @OneWeb @VRubinObs What would be loose change for @spacex or @amazon would be make or break money for most astronomical projects. One of the speakers asked astronomers to do more research - well, research needs funding. 14/n

@SpaceX @OneWeb @VRubinObs @amazon And until someone addresses that, the general tone of the discussion, consisting of diplomatic gratitude and relief that large commercial companies are willing to engage with the problem at all, rather sticks in my craw. 15/15.