Twitter Thread by Hector Socas-Navarro

Hector Socas-Navarro
@hsocasnavarro

This is not acceptable. A scientist cannot make a public claim of discovering something that s/he knows had already been discovered by others. I know it is obvious but that is exactly what happened in this press release of @theDESurvey @fermilab

@theDESurvey @Fermilab +..
The lead author, Yuanyuan Zhang, claims that "we discovered that intracluster light is a pretty good radial tracer of dark matter", which sounds awfully similar to...+

@theDESurvey @Fermilab +... this 2019 paper by Mireia Montes and Ignacio Trujillo (MT19) "Intracluster light: a luminous tracer for dark matter in clusters of galaxies" ...+

https://t.co/lzZ0KnPUB7

@theDESurvey @Fermilab +...Could it be that the authors were not aware of the MT19 work? No. I mean, it's not like MT19 was an obscure paper published in a small journal 30 years ago. It was published last year in one of the top astronomy journals... AND... +

@theDESurvey @Fermilab +...AND... NASA made a press release about it:

https://t.co/yJ3crQjWwT

That in addition to their home institution @IAC_Astrofisica press release:
https://t.co/yb60Mws5Cg

...+

@theDESurvey @Fermilab @IAC_Astrofisica +...
The MT19 paper was all over the science media ...+

Google intracluster light montes trujillo 2019

Intracluster Light Illuminates Dark Matter in Galaxy Clusters | Astronomy

Mireia Montes & Ignacio Trujillo. 2019. Intracluster light: a luminous tracer for dark matter in clusters of galaxies. MNRAS 482 (2): 2838-2851; ...

Dec 20, 2018

UNSW Newsroom

Faint stellar glow reveals the location of dark matter in galaxy ...

11 Jan 2019. Ivy Shih. The light of lone stars helps astronomers trace the distribution of dark matter in massive galaxy clusters ... Dr Montes' study is the first to confirm the potential of intracluster light in mapping dark matter

Jan 11, 2019

Astronomy Now Online

Faint glow generated by galaxy clusters helps map dark ...

Studying intracluster light only requires deep imaging, allowing astronomers to study more clusters in less time. Montes and Ignacio Trujillo of ...

Dec 22, 2018

Phys.Org

The case of the missing dark matter: new suspect found in galactic mystery

Dr. Ignacio Trujillo, co-author of the paper and researcher at the Instituto ... Dr. Montes and her colleagues used powerful telescopes and deep ...

Nov 27, 2020

Firstpost

Stars flung from their home galaxies could shed light, help us “see” dark matter

A more accurate and faster way, however, is to study the intracluster light (visible in blue), which follows the distribution of dark matter. Image: ...

Dec 22, 2018

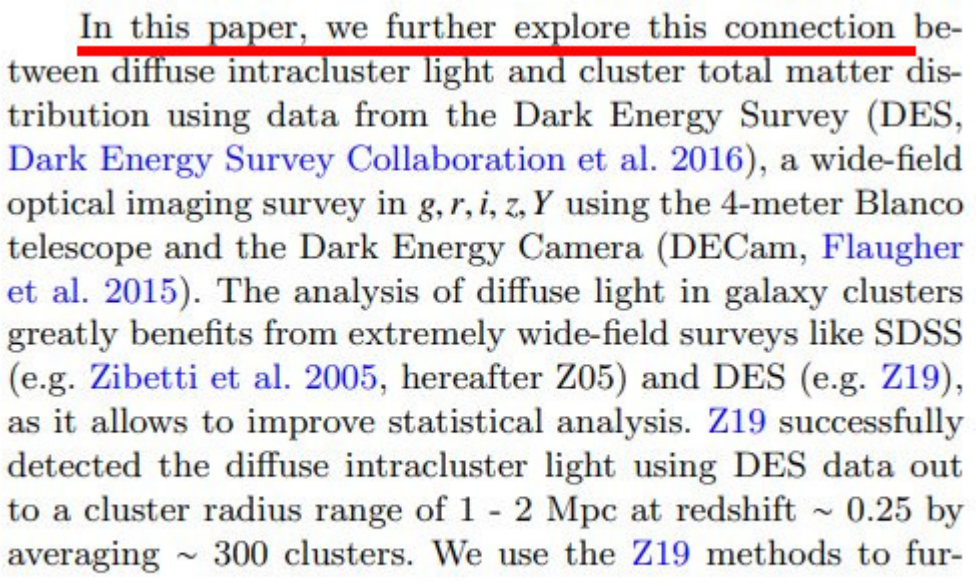
@theDESurvey @Fermilab @IAC_Astrofisica +.. There's no question that the authors were well aware of the MT19 paper because IT IS PROPERLY CREDITED IN THEIR TWO PAPERS. Here are some screenshots from both papers...+

8.3. *ICL Self-similarity*

A rather interesting result from this analysis is that the ICL radial profile appears self-similar – it scales with cluster R_{200m} inferred from cluster richness. In addition, starting from 100 kpc and out to 1 Mpc, the ICL profile appears to trace a theoretical cluster mass profile model. This is one of the first direct evidence establishing a connection between the ICL and the cluster mass radial distribution. Prior to this work, Montes & Trujillo (2019) examined the surface brightness contours of the ICL and the weak lensing mass maps of six galaxy clusters studied by the *Hubble* frontier program and found (1) visual similarity between the two and moreover, (2) compatible contour shapes with a quantitative shape estimator, in various radial ranges. Montes & Trujillo (2019) noted the potential of using the ICL observation to trace the cluster mass distribution. The results from our analysis provide additional direct evidence to such a conclusion.

Prior to the analyses in this paper and those presented in Montes & Trujillo (2019), hints of a connection between the ICL and cluster mass distributions can be found in a few observational and simulation studies that examine the radial profile of the ICL or the scaling between the ICL stellar mass and cluster mass. For example, Zibetti et al. (2005) found that the ICL profile is reasonably approximated by an NFW model (Navarro et al. 1997). A few other observational works have noted a stronger correlation between cluster mass and ICL stellar mass or luminosity outside the CG cores (e.g., DeMaio et al. 2018; Huang et al. 2018b). While the accuracy of the

@theDESurvey @Fermilab @IAC_Astrofisica +...In fact, the second paper says that "we further explore this connection" (see attached screenshot). So how does one go from "providing additional evidence" and "further exploring [a] connection" to "we have discovered that"??? ...+



In this paper, we further explore this connection between diffuse intracluster light and cluster total matter distribution using data from the Dark Energy Survey (DES, Dark Energy Survey Collaboration et al. 2016), a wide-field optical imaging survey in g, r, i, z, Y using the 4-meter Blanco telescope and the Dark Energy Camera (DECam, Flaugher et al. 2015). The analysis of diffuse light in galaxy clusters greatly benefits from extremely wide-field surveys like SDSS (e.g. Zibetti et al. 2005, hereafter Z05) and DES (e.g. Z19), as it allows to improve statistical analysis. Z19 successfully detected the diffuse intracluster light using DES data out to a cluster radius range of 1 - 2 Mpc at redshift ~ 0.25 by averaging ~ 300 clusters. We use the Z19 methods to fur-

@theDESurvey @Fermilab @IAC_Astrofisica +...We're told all the time that scientists need to overstate the importance of their results in a press release, or explain it in a way that the public can grasp the impact of the research. Look, I'm not saying this work is not important. It is! But this PR is not acceptable...+

@theDESurvey @Fermilab @IAC_Astrofisica +...We cannot lie to the public and that's what's happened here. I don't know whose fault it is. Exaggerated headlines or bad press releases are often blamed on the journalist who wrote them. But in the institutions I know, ...+

@theDESurvey @Fermilab @IAC_Astrofisica +..the lead scientist is ultimately responsible for the contents of a press release. Furthermore, Zhang's quote is "we discovered..."...+

@theDESurvey @Fermilab @IAC_Astrofisica +...In my opinion, it is dishonest to oversell one's achievements in a PR. The discovery that ICL traces dark matter was done by Montes and Trujillo, as is correctly stated in the scientific papers. The public should not be told a different story.

PS: Montes is @mireiamontesq

@theDESurvey @Fermilab @IAC_Astrofisica @mireiamontesq cc @emulenews @El_Lobo_Rayado @cienciabrujula @SaraRC83 @GastonGiribet @joseedelstein @DarkSapiens @radioskylab_es @StartsWithABang