# JUST IN: Scientist discovers signs of alien life!

Did you notice the headline ⬆️ and groan inwardly? Yeah. We know. So what could help us achieve better astrobiology communication? Here comes...

# Testing Uncertainty in Astrobiology Communication: An Experimental Approach


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## Key Q: Are uncertainty quantifiers helpful in communicating astrobiology discoveries?

### WHY IS THIS IMPORTANT?

- **Hype** creates misconceptions and erodes **public trust in science**, with potential impacts on policy and funds
- Jaded by inflated news, the publics may grow **indifferent to new discoveries**
- Not understanding why confirming the discovery could take years or decades could lead to **frustration** and **misinformation**
- Hyped news may empower fringe groups
- Basic understanding of (un)certanties in science has **practical impacts**
- Initiatives for new astrobiology scicomm guidance are underway, but lack **data**

Tech

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Jona Jaupi, Technology and Science Reporter

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We want to avoid this. But will numerical confidence assessments actually help (if so, which one(s), and how much)?

### KEY OBJECTIVES

- Experimentally test the **effectiveness** of various uncertainty measures **in public communications**
- Assess the measures' **reliability**
- Find out **journalists' attitudes** towards uncertainty quantifiers (it's no use if journalists don't use them)

### ASTROBIOLOGY (UN)CERTAINTY SCALES

- The Ladder of Life Detection (Neveu et al. 2018)
- The CoLD scale (Green et al. 2021)
- Biosignatures Standards of Evidence Workshop framework (Meadows et al. 2022)
- Anomalousness quantifiers (Kinney & Kempes 2022)
- IPCC-inspired framework (Vickers et al. 2022)
- ...with more likely to be devised (note: we're talking simple life in our system or exoplanet biosignatures; SETI has its Rio and London Scales)

### PROPOSED METHODOLOGY

- Experimental comparison of different ways to communicate uncertainty (study participants read a randomly assigned version of a news story; comprehension questions follow, and a follow-up survey is sent two weeks later to assess memory and comprehension again)
- Qualitative interviews with journalists to learn their opinion of proposed uncertainty measures
- Quantitative comparison of the measures' outcomes in case of previous unproven life detections (including the clearly false, such as Martian canals in Percival Lowell's time, as well as more controversial ones, such as ALH84001)

### REFERENCES


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