The Case for a Large-Scale Occultation Network

Malena Rice
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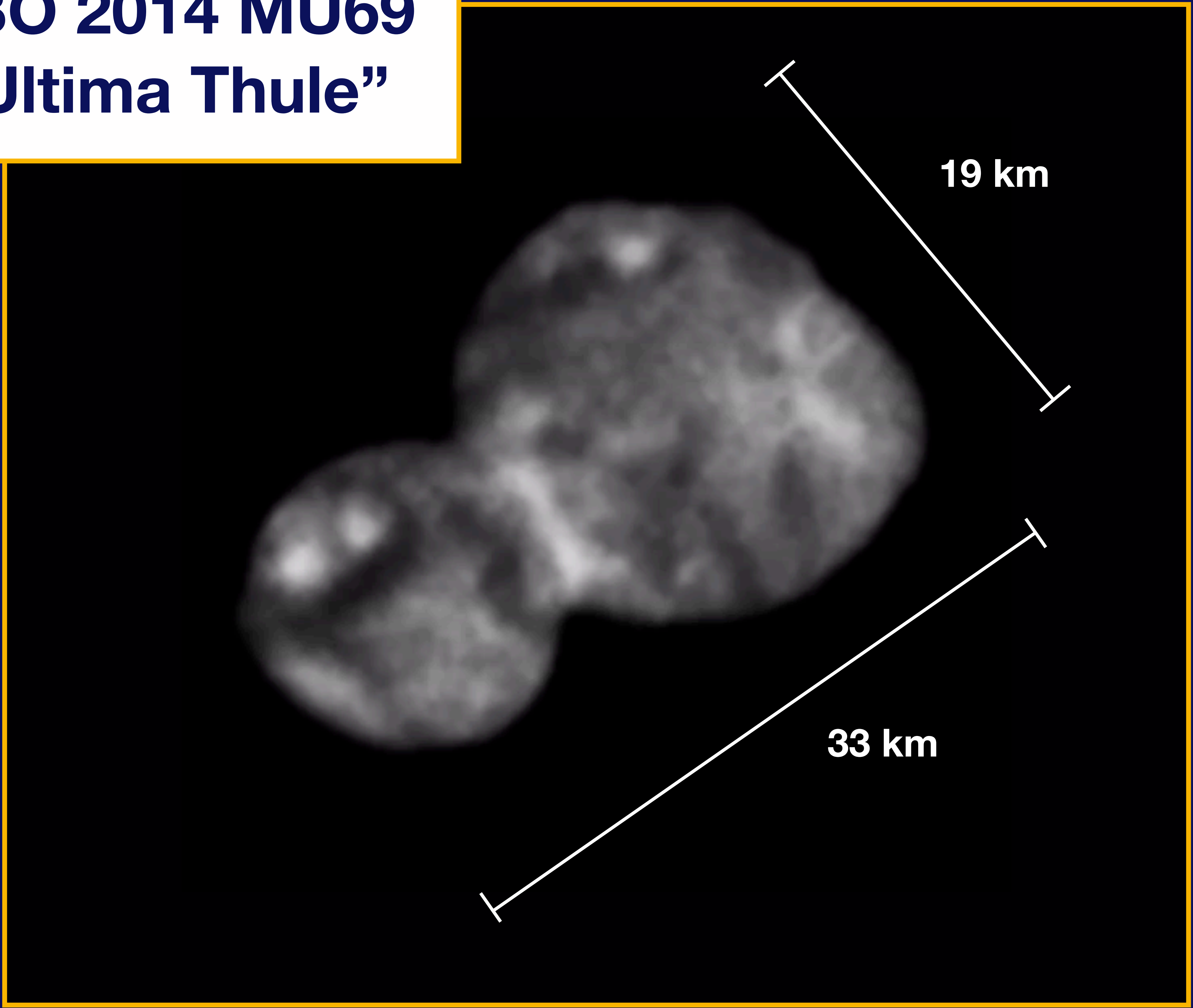
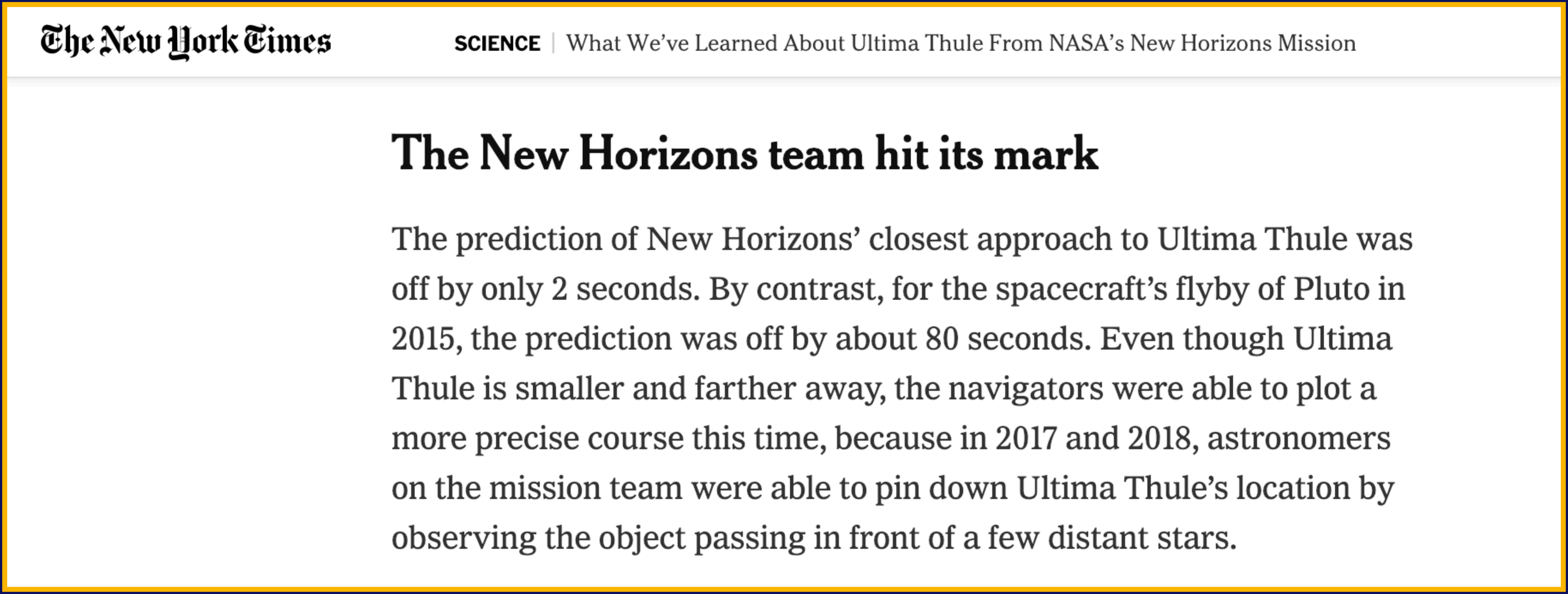
NSF Graduate Research Fellow

Large Surveys with Small Telescopes
March 12th, 2019

KBO 2014 MU69
“Ultima Thule”



Adapted from NASA / JHU-APL / SwRI



The New York Times

SCIENCE | What We’ve Learned About Ultima Thule From NASA’s New Horizons Mission

The New Horizons team hit its mark

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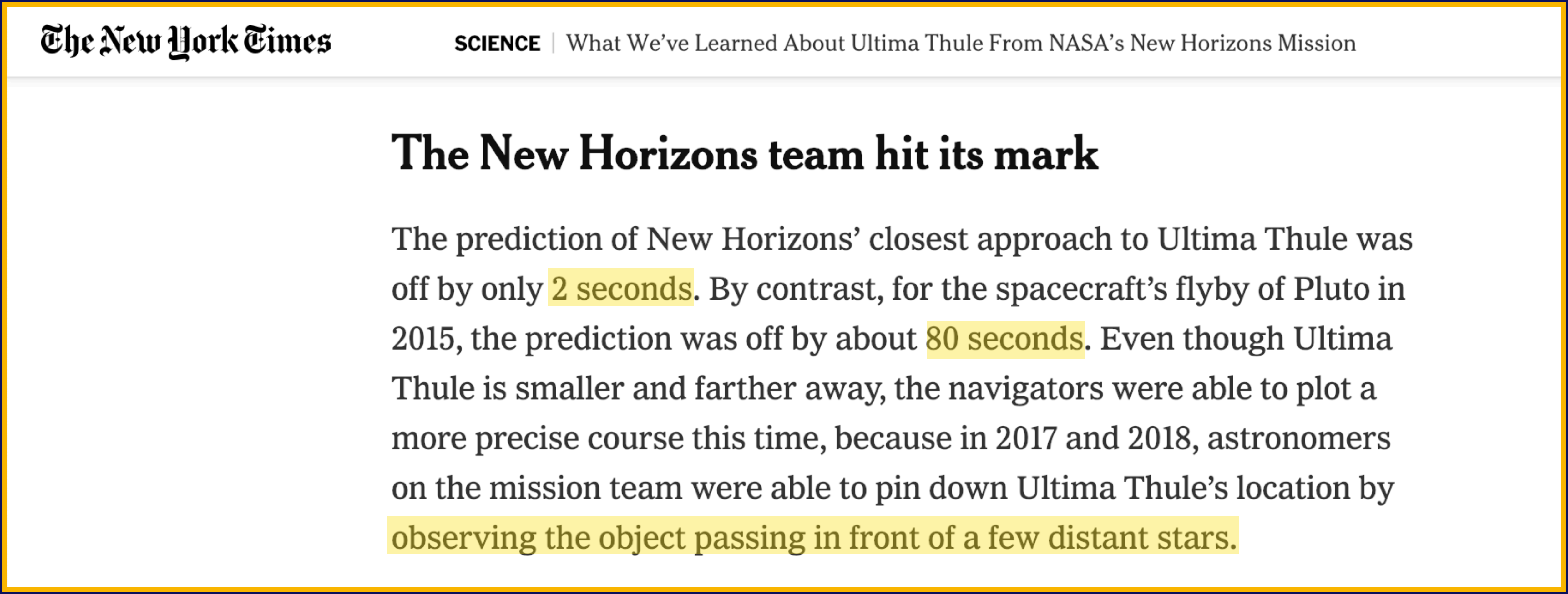
Article by Kenneth Chang



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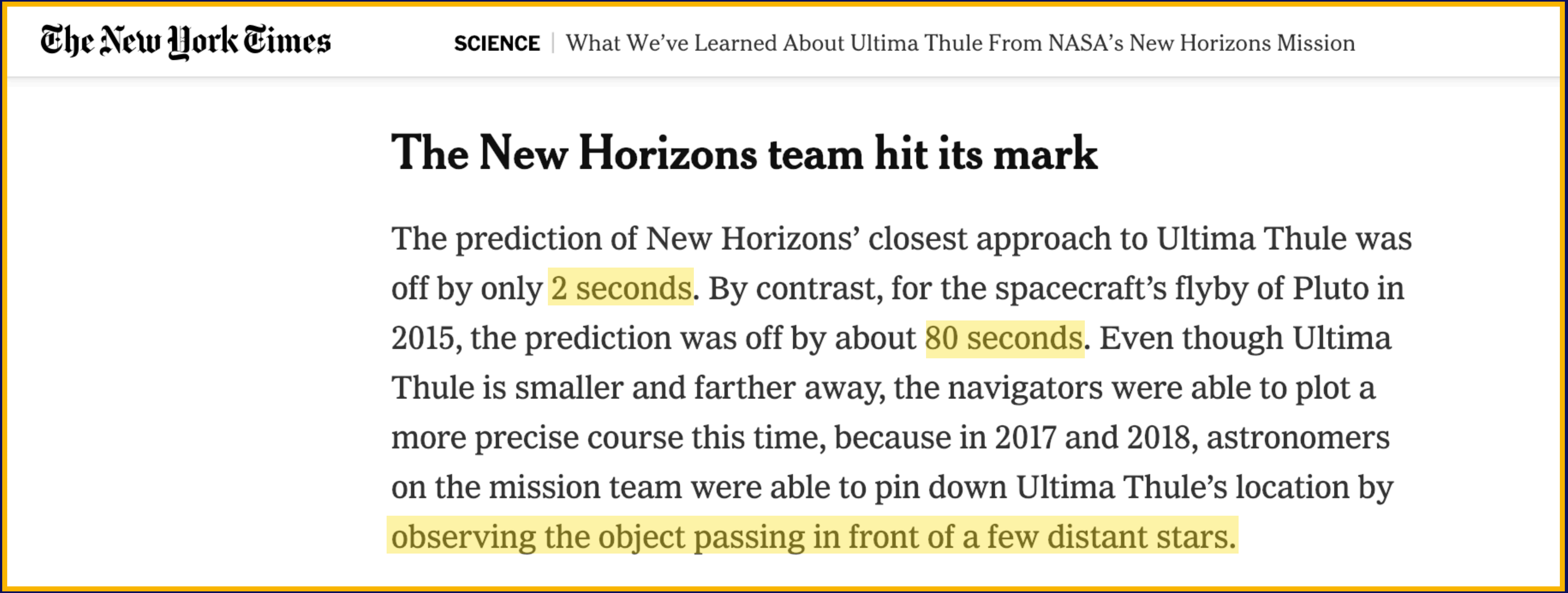

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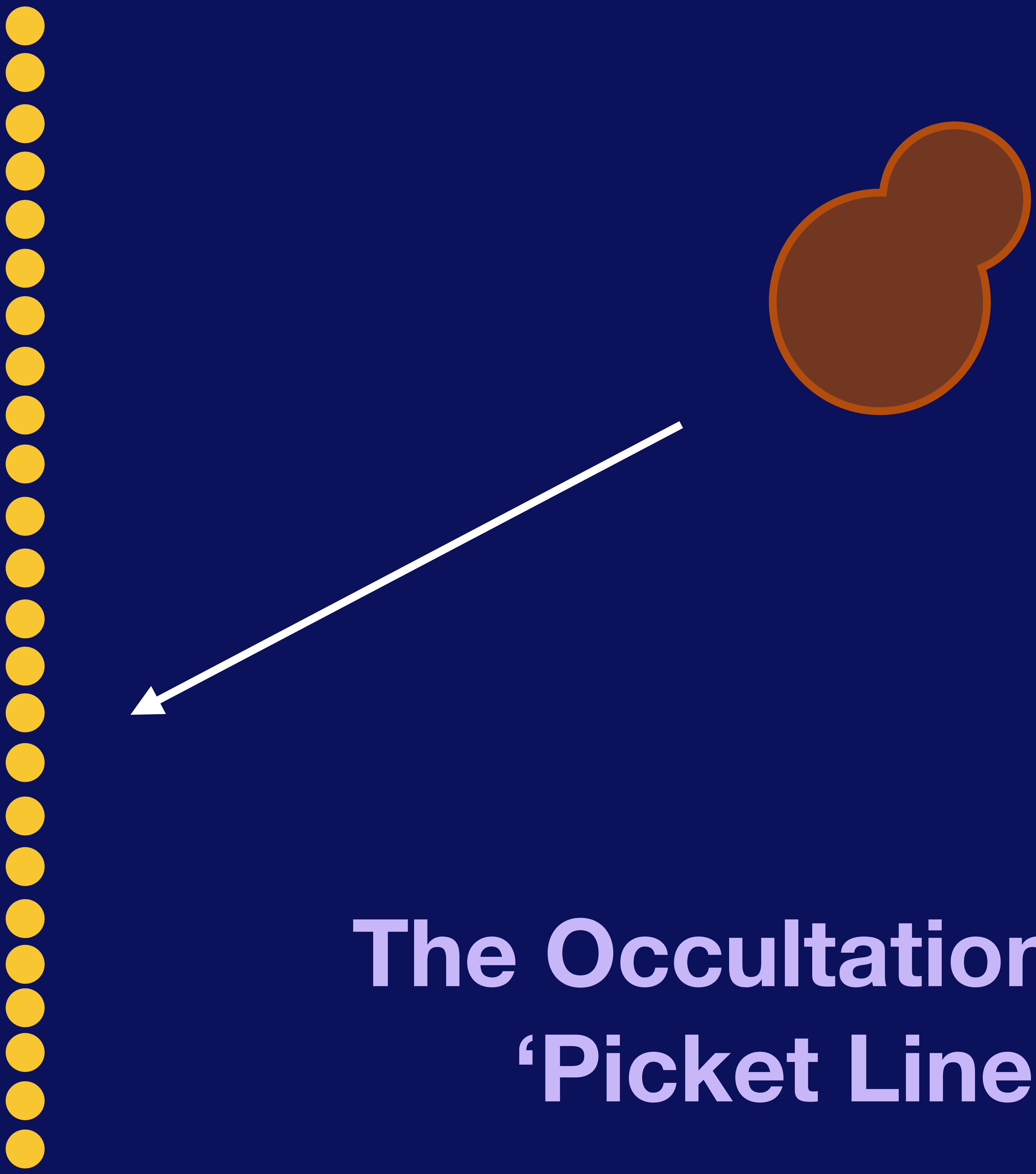
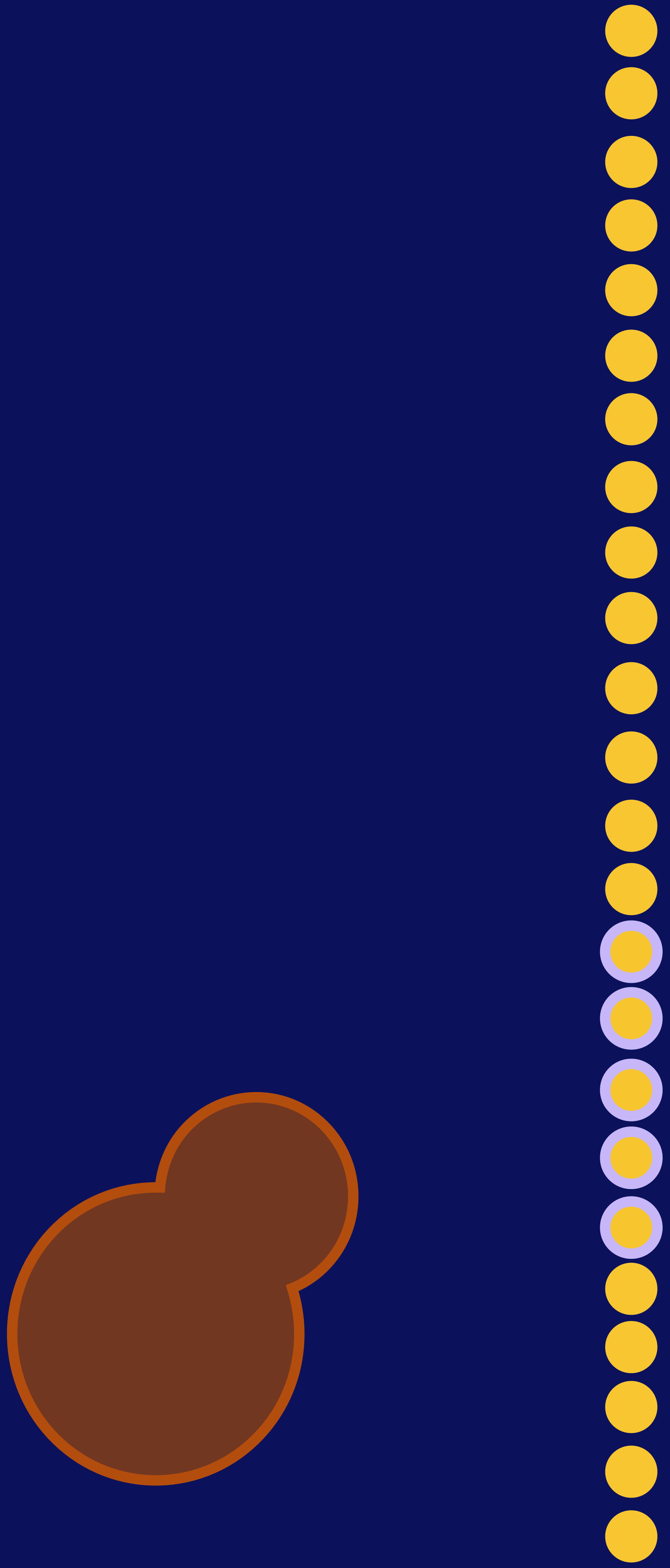
Why occultations?

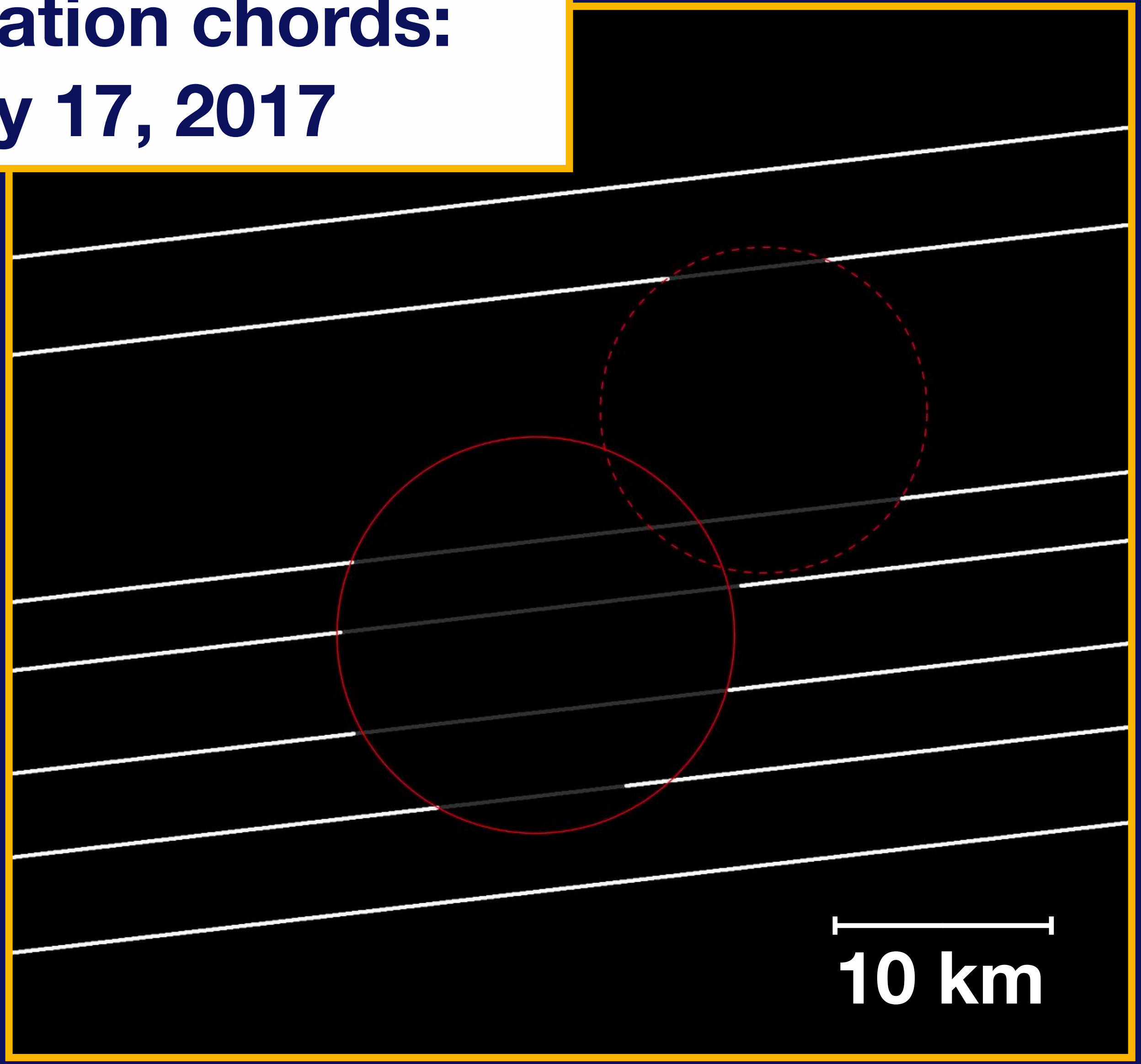
- Extremely precise positional measurements
- Tight constraints upon the sizes of occulting objects
- Multiple chords: rough 2D maps of the occulter



The Occultation ‘Picket Line’



Solid-body 2014 MU69 occultation chords: July 17, 2017



Adapted from NASA / JHU-APL / SwRI/ Alex Parker

The Occultation 'Picket Line'

LETTERS TO THE EDITOR

THE FAILURE OF CONGRESS

It Has Fallen Short of the Expectations of Our Fathers, It Is Said, Because the "Best Minds" Are Not Elected to It

To the Editor of The New York Times:

Of the three great departments of Government established by the Constitution, the legislative has proved by far the most disappointing and unsatisfactory. This should not seem wholly surprising. A comparatively limited acquaintance with practical affairs will soon convince most sensible men that business of any kind, large or small, public or private, is far more likely to be transacted with judgment and discretion, as well as with promptitude and precision, by one supremely competent individual, or by a small number of men especially qualified for their tasks by long training and experience, than by a body or bodies of large numbers of persons chosen without due regard to their fitness.

Legislative inefficiency, legislative disappointment of popular expectations, legislative blunders and delinquencies must be regarded, it seems, as the inevitable disadvantages inseparable from representative government. In no country, so far as we know, where the representative system has long prevailed, has there been entire satisfaction with its operation. In this country there were those no doubt who, when the Constitution was adopted, looked for a real improvement in this department of Government.

With experiences of the past, the lessons and warnings of history to guide them, the people of the thirteen Colonies, so fortunately situated, united in a Federal Republic, with perhaps unequaled opportunities for avoiding mistakes and improving upon the ancient monarchical system—the people of the thirteen Colonies might have been expected to establish and develop a National Government that would commend itself to the Old World as a model of what the Government of a free, progressive, enlightened nation might and should be.

That such expectations have not been realized is due mainly to the legislative department, its defects and failures.

Considering the large powers conferred by the Constitution upon the Congress, even though they are much less extensive than those of the British Parliament, it is reasonable to infer that the framers must have expected that the Senate and House of Representatives would be composed of the ablest men the country could produce, men of substance and competence, eminent by their intellectual attainments and public services and recognizably well qualified for the responsible tasks and duties of lawmakers. "For," as Milton long ago said, "the ground and basis of every just and free Government (since men have smarted so oft for committing all to one person) is a general council of ablest men, chosen by the people to consult of public affairs from time to time for the common good."

While undoubtedly the members of the great convention of 1787 were fully aware of the frailty of human nature and the readiness of men in public station to yield to temptation and fall short of the highest standards of official competence and fidelity, it could hardly have occurred to them, or impressed itself upon them, we apprehend, that the national legislature, instead of being composed of the best-equipped and most trustworthy citizens, might in the indefinite future include but a few of that type and many of a quite different and decidedly inferior variety.

They could not have foreseen the rise and development of party politics as we know it today; nor could they have had any adequate conception or anticipation of the rapid increase of the population of the country, of the great tides of immigration that would beat upon its shores, the expansion of its territory, the growth of its wealth, the quite unimaginable extent of its natural resources.

The complaint heard so frequently today is that there is in our national legislature a deficiency of members of the highest standing and ability; that, instead of statesmen of the largest competence and highest attainments, there are too many "politicians," and persons of inferior and limited qualifications, principally interested in favoring schemes urged by groups of selfish men seeking governmental favors at the expense of the people, or concerned about some personal advantage, such as securing a re-election.

Others, members of the minority party, for example, seem to regard it as their special function to criticize the the party in power, which, of course, is natural enough, and endeavor by means both fair and unfair to embarrass its leaders, if there are any; impede or thwart their designs, damage the Administration as much as possible in the estimation of the people and so reduce its chances of receiving popular support at the polls.

It must be admitted, we think, that there are in the national legislature too many "politicians," as the term is familiarly used, and not statesmen, who are more inclined to favor measures suggested and urged by groups, "blocs," minorities and supported by powerful extraneous influences, than to consider and guard the interests of the people as a whole, or to promote the general welfare.

Sent to the national capital to represent the great body of the people, most of whom cannot be constantly in communication with them, or shower upon them letters and telegrams whenever the Treasury is threatened by "raids," or other mischievous measures are under consideration, they seem to forget or to disregard the really great commission and trusteeship conferred upon them by popular election, and only too readily comply with the requests or yield to the demands of organized groups seeking to secure appropriations of the public funds or other resources of the nation for selfish or improper purposes, or in the interest of certain corporations, groups or localities.

That such a situation exists, it may be said, should not be regarded as anything unusual or surprising, or cause undue apprehension and disquietude, since experience has shown that such faults, such defects, such misconduct are generally to be expected of legislative bodies; that being, as they are, subject to many and diverse influences, it should occasion no surprise that they often proceed with insufficient deliberation to the enactment of ill-advised and even mischievous measures. Nor in the expenditure of the public funds is it reasonable, one may say, to expect that they will exhibit the prudence or exercise the restraint that a scrupulous regard for the taxpayers would seem to dictate.

Again, since the influences and forces opposed to the general welfare are generally more audacious and pertinacious than those wholly in the public interest, it should occasion no surprise that legislators not infrequently yield to the former. Organized groups of determined men with selfish ends in view and well-paid agents to work for them can always be counted on to be more active and effective in the furtherance of their schemes than those private citizens, small in number, who are concerned wholly with the prevention of legislation opposed to the public good. The few who have the time, the inclination and the energy to work steadily for the public, as opposed to special and private interests, often find it difficult, if not impossible, to compete successfully with the agents of the groups seeking to secure privileges and favors at the expense of the people.

The electorate, citizens generally, it is hardly necessary to say, know little or nothing about the proceedings of Congress, or the means and methods employed by the self-seeking groups and their agents to induce legislators to approve and enact their bills. Indeed, not very many citizens, we fancy, know the names of their Representatives in Congress. They, of course, do not read the Congressional Record, and not much of the newspaper accounts of the daily discussions in Congress.

How "to provide the means of enforcing accountability" and deepening the sense of responsibility in our legislators and in all public officials, for that matter, is a question that might profitably engage the attention of citizens.

It should not be expected that the representatives of the people, when they go to Washington, will at once and completely divest themselves of the pettinesses and sordidnesses of local party politics, or the habit of regarding important questions and problems of public concern from the "machine" point of view. Yet it should seem as if men of even small mental capacity and limited outlook, when chosen to represent districts, States and the nation itself, might feel an impulse and make an effort to rise above the low and unworthy plane of their wonted ways of thinking and acting; that they might experience a certain expansion or elevation of spirit and consider how serious an obligation and how honorable a trust had been conferred upon them.

To be commissioned to make laws for the people of the United States, with all that such a commission implies—this in itself might be expected to prompt in them a clear desire and eagerness to exhibit diligence and fidelity. And there are members of both houses of Congress of statesmanlike stature and attainments who are responsive to suggestions and receptive of influences of a higher and nobler sort, men of large experience and disciplined minds, who, conscious of the dignity and distinction of "the representative trust," are sincerely desirous of giving to the great problems of Government and questions of public policy the serious consideration which they merit.

That the citizens who constitute the electorate should choose certain of their fellow-citizens to make laws for them, entrust them with the power to provide by taxation means for the conduct of the Government, in a word, with "the power of the purse," and to discharge all the varied and important duties that devolve upon legislators of a great Federal Republic, and then that these their representatives should fail to manifest a fine sense of honor, fidelity to duty and loyalty to the trust committed to them—this surely cannot but be a grevious disappointment to thoughtful citizens and all those whose hopes for the progress of mankind are largely centred in the successful operation of representative Government.

HENRY E. GREGORY.
New York, Jan. 26, 1925.

McKINLEY AND STONEWALL.

To the Editor of The New York Times:

"Stonewall" Jackson saved the late and beloved President William McKinley for the nation. The incident, so far-reaching in the annals of American history, occurred at the Battle of Antietam, the "bloodiest day in American history."

Jackson, though a raging fighter on fields of battle, had a gentle heart and a high vision of justice. As the contending troops, the Blue and the Gray, struggled in deadly conflict on Antietam's battleground, they were separated by Sharpsburg Creek. One of Jackson's men was aiming his gun at a daring blue-clad boy whose intrepid courage had made him conspicuous. Jackson called in the nick of time:

"Stop, don't shoot! I have watched that youth for hours. He is too brave to be killed!"

The youth proved to be William McKinley.

In my chapter contributed to William C. Chase's "Story of Stonewall Jackson" I cited this occurrence during the tragic progress of that memorable battle on Maryland's historic soil as instancing the heart of heroism in Stonewall Jackson, whose gentleness was so strangely mingled with unconquerable courage.

On Jan. 21 we pay reverence to Stonewall Jackson, whose heroic soul responded to a youth's bravery and saved an outstanding statesman of sterling stamina—the martyred McKinley of immortal fame.

Strangely did the power of Fate give to our Republic the Ohio boy by the timely tenderness and justice of Jackson in that peril-fraught moment!

I recently watched the work of carving on the breast of Stone Mountain in De Kalb County, Ga., [illegible] mighty memorial, eternally teaching all tomorrows, reaching many lives in many lands, as also visualizing a vision to posterity with a silent power, unperishing and perennial in its abiding beauty and living lesson.

On Jan. 21, Jackson's anniversary, our hearts should link McKinley's memory in love with our chieftain of Dixie! Victor Hugo truly said:

"Man may lay waste, man may destroy, man may kill; but the Summer remains Summer, the lily remains a lily, the star remains a star!"

Some years ago here in Macon I heard McKinely, in an oration that was a marvel of matchless simplicity, utter these words:

"Men and women are books, and events are life's vast volume of illustrations!"

Dickens said "Simplicity is the soul of elegance."

Civilization is the pause between impulse and action.

ARNOLD B. HALL.
Macon, Ga., Jan. 18, 1925.

"AN EDUCATED MAN."

To the Editor of The New York Times:

The editorial "What Is an Educated Man?" in THE TIMES presents a question of first importance. It merits much and deep consideration. Mr. Ramsay MacDonald expresses a fine sentiment, one worth much consideration, and your comments are in keeping with it. * * *

W. E. Chancellor says of the educated man, "He knows how to see things and what he sees; moreover, he can see through appearance to realities." If every one, and especially our great leaders in all spheres, would turn aside from the things that engross them and devote an occasional few minutes to calm contemplation of this and other pertinent points on the subject in "A Theory of Motives, Ideals and Values in Education" it would do much to lead us to living the Golden Rule, which only can effectually end war—in fact, all strife, whether between individuals, groups or great nations.

H. L. YOUNG.
New York, Jan. 26, 1925.

THE ORIGIN OF NEW YORK CITY

The Purchase of Manhattan Island From the Indians and the Early Dutch Colonizations Are Outlined

To the Editor of The New York Times:

M. K. Van Rensselaer's letter in your issue of Jan. 22 would seem to imply that there exists a doubt in the minds of many New Yorkers as to the date when Manhattan Island was purchased from the Indians and the area that purchase covered; also the date when the first white inhabitants gathered in the early settlement named New Amsterdam.

A consideration of a few salient events should set all such doubts at rest.

In the years immediately following the return in the late Fall of 1609 of Henry Hudson after his memorable voyage up the "Great River" (Hudson) Holland merchants sent vessels to trade with the Indians. Finding this trade profitable, the merchants of Amsterdam and Hoorn founded the New Netherlands Company, to which on Oct. 11, 1614, the States General granted a four years' monopoly of the fur trade in the New Netherlands.

This company was not a corporation but an association of merchants, each trading on his own capital. It possessed no colonization rights, and when its charter expired in 1618 a renewal was refused.

Late in 1614 the New Netherlands Company merchants built a trading block house called Fort Nassau on the upper end of Castle Island, just below Albany. In 1617 this fort was abandoned for a new one of the same name located on the Normanskill, two miles below Albany, which fort in turn was abandoned when the Dutch West India Company in 1622 built Fort Orange on the site of what is now the steamboat landing in Albany. These three trading posts were the only substantial buildings constructed on the shores of the Hudson River prior to 1626.

The Dutch West India Company, chartered June 3, 1621, claimed exclusive title to the territory comprising the present States of New York, New Jersey and Connecticut. Early in March, 1623, the company sent out as settlers thirty families of Huguenot-Walloons in the ship New Netherland, which arrived early in May and landed on Manhattan Island eight men, who joined a few scattered traders living in makeshift shelters.

Governor Peter Minuit arrived at Manhattan May 4, 1626, bringing with him a number of colonists. During the Summer of that year Minuit, representing and acting for the West India Company, purchased Manhattan Island from the Algonquin Indians. In a letter dated Nov. 5, 1626, P. Schagen, writing from Amsterdam, advises the States General at The Hague as follows:

> Here arrived yesterday the ship Arms of Amsterdam, which on the 23d September sailed from New Netherlands; * * * their wives have also borne children there. They have bought the island Manhattes from the savages for the value of sixty guilders. It is 11,000 morgens in extent.

This purchase was also confirmed in a communication of the same year from the West India Company to the Holland States General. That same Summer the building of a fort 250 feet long by 250 feet wide was begun but not completed until ten years later. A stone counting house was erected inside the fort, all other buildings being constructed of bark. At that period the West India Company jealously refused to sell any land whatever on Manhattan Island, not even for home building sites. This policy was later abandoned, and house lots were sold to the company's servants exclusively. Later the privilege to buy was extended to merchants, and some years later still the company consented to sell farm lands, changing their earlier policy of only leasing farms for six-year terms.

There is no record of the birth of Jean Virgin, who was undoubtedly born on Manhattan and died there in 1689, leaving no descendants. A prenuptial contract made in 1632 at the time his mother married her second husband refers to Jean as a child. From this we can infer that he could not have been born as early as 1614. Jean was probably a year or so older than Sarah Rapelye, born at Albany June 9, 1625.

Eleven thousand morgens of land, largely in excess of the total area of Manhattan, would seem to be strong testimony that the West India Company bought the entire island, of which they took undisputed possession.

Commencing the construction of Fort Amsterdam in the Summer of 1626, on the site of the present Custom House, was the first action that definitely located a centre on Manhattan Island around which gathered the small community that founded New York City. All existing evidence fixes 1626 as not only New York's birth year, but the year in which the embryo world metropolis first received the name New Amsterdam.

In suggesting a search for documents in Holland your correspondent must apparently have momentarily forgotten that the Legislature in 1841 authorized John Romeyn Brodhead to investigate and transcribe all papers and records relating to the early Colonial history of New York State that could be found in Holland, France and England. Mr. Brodhead spent three years in carrying out this work and the State published the papers under the title "Documents Relative to the Colonial History of New York."

Mr. Brodhead discovered, however, that unfortunately the West India Company in 1821 sold as junk all its papers and records of an earlier date than 1700. Consequently the most valuable of the original documents relating to the early history of Manhattan, including the deed from the Indians, is apparently no longer in existence.

DUNCAN H. SILL.
Northampton, Mass., Jan. 27, 1925.

AN INDIAN VIEW OF OPIUM.

To the Editor of The New York Times:

The thoroughgoing manner in which you have reported the opium conferences in Geneva leads me to think that you will be interested to put before your readers the following extracts from The Bombay Chronicle, which may fairly be called the voice of the real India today, something far removed from John Campbell's India! Says the leader writer of The Chronicle of this gentleman:

> [His] unblushing misrepresentation of the attitude of India toward opium traffic continues unabated. * * * Mr. Campbell's outrageous commercialism is at variance with Indian sentiment. The only effective method by which the opium evil can be arrested is by firmly restricting the use of the drug to medicinal purposes only and by drastically reducing the area under cultivation. But the Government of India, with its expensive superior officers, derives a fat revenue from the opium monopoly and can ill afford to forego it, and India's "representative" seems to be placing every sort of obstacle in the way of the conference. * * * India's was the only minority vote against the resolution referring the American proposals to the First Committee for examination and report—Great Britain knowing well that this * * * was potent enough to block effectively any progress on these proposals.
>
> India thus through her "representative" is serving not only the bureaucracy here, but all foreign monopolists of the traffic as well, who fear that if the American proposals are adopted and enforced there would be an end of their immoral profits. * * * It is no wonder that the British Government of India should be moving heaven and earth to prevent the acceptance of the American proposals. In doing so it has not stopped at gross misrepresentation of the attitude of the people of this country toward the evil. * * * Mahatma Gandhi's telegram must have served not a little to open the eyes of the world, however, including the British public. The enormity of the wrong that their representatives in India are doing lies in exploiting a degenerate habit. * * *
>
> But the efforts of American humanitarians, combined with those of Indian leaders, are bound sooner or later to expose in all its naked hideousness the crime against humanity in which foreign opium monopolists in India and elsewhere are engaged, and to make it impossible to continue reaping profits out of the degradation and misery of human beings.

In view of the splendid fight that the United States made through its representative, such encouragement from the scene of poppy cultivation cannot but strike a sympathetic chord in the hearts of Americans. This is a fight against a vice that has now girdled the world, and an ever-growing vice, at that. Humanity says it must stop.

BLANCHE WATSON.
New York, Jan. 25, 1925.

RECOGNITION OF RUSSIA

To the Editor of The New York Times:

The European Governments refused to recognize the French Republic of 1793 because of its objectionable character. The Soviet Government of Russia is a government by and for the "proletariat." It repudiates the right of private property and of independent labor. It is maintained by terror created by its crimes. No Government could be more objectionable to a Government by all the people, for all the people, recognizing and protecting the sacred rights which the Soviet denies. Its existence is a menace to all other Governments, justifying its suppression.

No other reason should therefore be needed for a refusal to recognize it. But there is a stronger reason why the Government of the United States should steadily continue its refusal to accord the Soviet recognition. This reason is found in the persistent efforts of the Soviet Government to reduce all other Governments by internal force to its disastrous level. It is therefore practically in a state of war against the United States, though covertly prosecuted. Owing to the refusal of our Government to recognize it, its opportunities are happily limited by acts of Congress; but if our Government accords recognition to its enemy, giving its numerous representatives diplomatic immunity, and giving it a legal centre in Washington from which to broadcast its propaganda of class hatred and to organize the disaffected, the opportunities it desires will be given. Recognition of the Soviet therefore would, to say the least, be the antithesis of a government of common sense, so strongly advocated by the President in the last election.

It is true that "all States owe it as a duty to their citizens to keep open the channels of intercourse, so that they may trade with and sojourn in every other State having a de facto existence"; but there is a higher duty, that of self-preservation, which requires a State "to avoid as far as possible whatever might cause its destruction or that of the State, which means the same thing."

Engagements of the Soviet Government not to wage its war against the Government of the United States in order to obtain the advantage of recognition would be merely "a scrap of paper" to be secretly avoided. A Government maintained by the violation of all moral standards, and which exerts itself to suppress all religion, can have no regard for its obligations and will not permit them to interfere with the prosecution of its vicious aims. This has been demonstrated in the matter of its recognition by France in the hope (vain as it seems) that it would thereby obtain an adjustment of the vast indebtedness of former Russian Governments to French citizens, and its recognition by the Labor Government of Great Britain. "When proof of facts is present what need is there of words."

HORACE STRINGFELLOW.
Montgomery, Ala., Jan. 25, 1925.

THE SPLENDOR OF THE ECLIPSE

How It Impressed Those Who Viewed It, and Their Accounts of the Strange, Unearthly Phenomena They Saw

To the Editor of The New York Times:

When New York beheld—from roof-top and window-sill, street corner and omnibus—the marvel and beauty of a flaming circle in the sky, the mind reverted to considerations of God and man, of religion and science.

Science, with all its startling and justly commendable progress, should all the more reasonably bring God and man into more intimate communion. Every advance in science ought to be an approach toward, not a retreat from, God. In its greatest discoveries it reveals and not conceals the grandeur and the unity of God's order and creation. Those that saw that ring of fire in the heavens last Saturday were prompt and sincere in their praise and wonder that human beings could predict with such nicety and accuracy the minute of the total eclipse. The development of mathematics and astronomy to so fine and precise a degree is, and rightly so, a fit subject for our wonder and our regard.

But there is another consideration. In our exaltation of science we should not permit it to eclipse our appreciation of God's unsurpassing mystery and might that so bewilderingly orders, regulates and controls the whole wide firmament—earth, sun, stars, moon and sky—that they in their turn fit and agree so unerringly, so relentlessly, so astoundingly true to the mathematical applications of man. Great souls, great intellects like Dante, saw this truth of unerring design, unvarying regulation, this harmonious conformity—this divine unity of creation. * * *

JEROME ROLAND O'CONNELL.
New York, Jan. 26, 1925.

The View From a Mountain.

To the Editor of The New York Times:

I have read the letter of P. M. Adler in today's TIMES, and beg leave to add some remarks of my own on the eclipse, which I witnessed from the same point, the top of Beacon Mountain, overlooking the Hudson, and very near the central line of totality.

Mr. Adler proves himself to have been a very close observer; but he omitted to mention the weird shadow bands which appeared with such distinctness on the snow about our post of observation. The conditions were all absolutely perfect for seeing every phenomenon, the air being crystal clear and our elevation being 1,400 or 1,500 feet. There was no wind to confuse us, and perhaps the nipping and eager air (said by one of the hotel men to be 4 below zero) may even have quickened our senses.

The shadow bands, according to Isabel M. Lewis, appeared to be moving from the southwest toward the northeast, both before and after totality. Some observers have said the bands go helter skelter, "every which way." Something more needs to be learned, I judge, on this point. They have not been seen on the wings of airplanes, but only on white surfaces on the earth, and must have to do with lines of different density in the air close to the ground, and might perhaps be affected by wind currents. There may even be some optical illusion about what some see.

As Mr. Adler says, there was not the least bit of color, yellowish or otherwise, in the corona itself during the whole duration of totality—and this was, where we stood, exactly one minute fifty-five and six-tenths seconds, by the computation of Mr. and Mrs. Lewis and they must know, for they get out all that heart-breaking mass of computation in the Nautical Almanacs. This glory of the sun, the wonderful corona, was, in the high and clear atmosphere of this mountain top, of a pearly white radiance, such as might best be described in the words of one of the visions in the Book of Revelation concerning the glory of the heavenly Jerusalem. In fact, the thought in my mind was as if for the first time I was beholding the true glory of the sun; as if the ordinary glare of the noonday sun belonged, after all, to the earthly sphere, while the unearthly effulgence of the corona belonged to things purely heavenly.

None of our own party saw the approaching shadow coming from the west at the rate of a half mile or more per second; neither did Mr. Adler see it, though he describes the receding shadow, after totality, as being very impressive. We had gone to Beacon Mountain party to see the shadow, traveling at such speed that one hour and forty-three minutes would suffice to carry it from Red Lake, Minn., to the Shetland Islands. All books and articles on eclipses had prepared us to be greatly awed by the appearance of this shadow of the moon, sweeping down to engulf us. But, in spite of high elevation and a world of snow, we saw nothing but darkness gradually closing down on the Hudson and the hills beyond.

H. O. DuBOIS.
New York, Jan. 27, 1925.

As Seen from a Train.

To the Editor of The New York Times:

Perhaps nowhere in the country was the eclipse witnessed under the same conditions as we saw it from Train No. 9 of the Delaware & Hudson Railroad as we crossed the Canadian border near Lacolle, Canada. Having no smoked glasses, or anything of that nature, to shield the eyes from the glare, the big 600 that was drawing the train furnished a thin smoke screen which made a perfect substitute for a glass. The exhibition was perfect, with the exception of a few thin clouds. The passengers rushed to that side of the train and we had quite an exciting time. It produced a twilight condition that was very interesting to observe.

R. A. KLINE.
New York, Jan. 26, 1925.

The Four Seconds' Delay.

To the Editor of The New York Times:

I find it stated in THE TIMES that the pull of the sun and planets on the moon can be calculated with precision, but for some unknown force the moon speeds up and slows down in an unaccountable fashion, and also that our otherwise faithful attendant at times gets somewhat off its course. For the reason that it has been figured out what effect the power of attraction of the sun and planets creates on the moon, why not also consider the intimate relation of the earth in its details toward its companion?

The four seconds' delay of the moon to the place of appointment should be easily explained as being lost during its transit across the American Continent, as no doubt these two projecting masses acted as a retaining force on the "flying maiden."

The Northern American Continent additionally, being the larger, will probably tend to distract the satellite, thus causing it also slightly to deviate from its course. Both of these irreproachable irregularities will be made right by the fair neighbor while hovering over the unobstructed Atlantic Ocean. * * *

PAUL GERLI.
New York, Jan. 26, 1925.

Seen in Manhattan.

To the Editor of The New York Times:

There still seems to be some doubt as to whether or not people below Ninety-sixth Street, Manhattan, saw the total eclipse and the corona. I was on the roof of my home, on the southwest corner of Ninety-first Street and Central Park West, and at 9:11 o'clock precisely for barely two seconds, if that much, the sun was totally eclipsed and I saw a flaming ring around the moon-covered sun. The three stars also were very plainly discernible.

CATHARINE KRAMER.
New York, Jan. 27, 1925.

With the Naked Eyes.

To the Editor of The New York Times:

I read an article today saying that "we astronomers were at fault in failing to emphasize that the spectator should see the total eclipse with the naked eyes." Having seen one partial eclipse and having read in your paper a statement from a well-known oculist saying not to use your eyes until almost time for the total eclipse, that the grandeur could then be seen at the fullest, I waited for the eventful moment. I saw the total eclipse, in all its wonderful array, with the naked eye. I felt as if I were being carried into the celestial bodies—into eternity. Such grandeur is indescribable. My advice would be—see a total eclipse with the naked eye. I never once used a film or smoked glass, but waited for the psychological moment—that awe-inspiring moment of a lifetime.

Mrs. KATHERINE NEAL SIMMONS.
New York, Jan. 27, 1925.

The Report of the Eclipse.

To the Editor of The New York Times:

With due respect for the valuable contributions concerning the solar eclipse from your especially engaged observers, may I be permitted to voice my thanks and appreciation of the account as given by one who is evidently one of your regular staff? It is my humble opinion that the article in your Sunday edition, unsigned, in the last column of Page 1, news section, is a chapter of history of literary value deserving of memorable recognition. The author made me see the eclipse with the eyes of mankind and said for me all and more than I was able to think when I observed it.

FATHER PATRICK.
New York, Jan. 27, 1925.

The Colors of the Corona.

To the Editor of The New York Times:

I have seen many letters about the "diamond ring," "Bailey's Beads," &c., but as yet no one has referred to the climax of the whole show, viz., the change of the white corona into prismatic colors, an altogether heavenly beauty of iridescence, encircling the midnight orb.

Mrs. A. M. G.
New York, Jan. 27, 1925.

EXCERPTS FROM LETTERS ON MANY SUBJECTS

Propaganda and Rum.

I see from a recent dispatch that Senator Borah contends that the United States Government has the right, because Great Britain requested the Soviet Government to stop its propaganda against her, to request the British Government to restrain her nationals from trying to undermine the United States Prohibition law. I should like to point out that Great Britain is not requesting its nationals to stop spreading propaganda, but is requesting the Soviet Government itself to refrain therefrom. What their nationals do (unless they are in the pay of the Soviet Government and thereby direct agents) does not worry the British Government. Now the rum (or whisky) business in Great Britain is perfectly legitimate and the Government has no control over what her citizens do in that business so long as they abide by the laws and regulations of the country. * * *

CHARLES COOK.
Winnipeg, Man., Jan. 19, 1925.

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Senator Borah and others who assail France have overlooked altogether the conditions under which a part of her so-called debt to the United States was incurred. The United States declared war against Germany in April, 1917. We

ually "forget it")—provided we accept his major premise that the war was our war. But would he, in similar circumstances, be as generous? Let us say that he visits again the Reichstag and finds two of its huskiest members beating up half a dozen others; to save these last from annihilation he pitches in on their side and ends the war. He comes out of it with an almost whole skin, but his clothes are ruined, his pocketbook and watch are gone—and his broken walking stick has not the dignity that once made it valuable. But in his pockets are the notes of his beneficiaries, covering, not his contribution in actual fighting nor even his personal loss, but the losses and expenditures of his late "allies." Let us say he does make up his mind to forget these obligations (and most Americans, Mr. Wickersham included, were in just that state of mind five years ago); but his friends begin to twit him about the notes and he overhears his late "allies" say plainly that they feel no obligation in them, that they represent an expenditure to carry on a fight that was his fight, and, had the bullies been allowed to win they would then have turned and smashed him to bits—that in saving the tottering ones he was only helping himself. Let's ask Mr. Keynes if even a British conception of sportsmanship would bear up in this exigency. * * *

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Lafayette College, Easton, Pa., Jan. 26, 1925.

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S. L. G. KNOX.
Englewood, N. J., Jan. 26, 1925.

French and British Taxes.

Current discussions of the allied debts frequently include the statement, which is constantly made by British apologists, that French taxation is much lower than British taxation. This notion, which was first given wide circulation by Keynes in his "Economic Consequences of the Peace," was scientifically examined by a writer (apparently an official of the United States Treasury Department) in Foreign Affairs in September, 1923. This author sums up an elaborate statistical inquiry by saying: "In common with many people, the writer had supposed English taxation to be far and away the heaviest in the world"; but "tax-collection figures show that the French taxpayer in 1922 paid an amount equal to 18.3 per cent. of his pre-war income and that the English taxpayer in 1922 paid 20 per cent. of his

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A FRIEND TO DOGS AND BIRDS

To the Editor of The New York Times:

he took up the fight for sensible animal

LETTERS TO THE EDITOR

THE FAILURE OF CONGRESS

It Has Fallen Short of the Expectations of Our Fathers, It Is Said, Because the "Best Minds" Are Not Elected to It

To the Editor of The New York Times:

Of the three great departments of Government established by the Constitution, the legislative has proved by far the most disappointing and unsatisfactory. This should not seem wholly surprising. A comparatively limited acquaintance with practical affairs will soon convince most sensible men that business of any kind, large or small, public or private, is far more likely to be transacted with judgment and discretion, as well as with promptitude and precision, by one supremely competent individual, or by a small number of men especially qualified for their tasks by long training and experience, than by a body or bodies of large numbers of persons chosen without due regard to their fitness.

Legislative inefficiency, legislative disappointment of popular expectations, legislative blunders and delinquencies must be regarded, it seems, as the inevitable disadvantages inseparable from representative government. In no country, so far as we know, where the representative system has long prevailed, has there been entire satisfaction with its operation. In this country there were those no doubt who, when the Constitution was adopted, looked for a real improvement in this department of Government.

With experiences of the past, the lessons and warnings of history to guide them, the people of the thirteen Colonies, so fortunately situated, united in a Federal Republic, with perhaps unequaled opportunities for avoiding mistakes and improving upon the ancient monarchical system—the people of the thirteen Colonies might have been expected to establish and develop a National Government that would commend itself to the Old World as a model of what the Government of a free, progressive, enlightened nation might and should be.

That such expectations have not been realized is due mainly to the legislative department, its defects and failures.

Considering the large powers conferred by the Constitution upon the Congress, even though they are much less extensive than those of the British Parliament, it is reasonable to infer that the framers must have expected that the Senate and House of Representatives would be composed of the ablest men the country could produce, men of substance and competence, eminent by their intellectual attainments and public services and recognizably well qualified for the responsible tasks and duties of lawmakers. "For," as Milton long ago said, "the ground and basis of every just and free Government (since men have smarted so oft for committing all to one person) is a general council of ablest men, chosen by the people to consult of public affairs from time to time for the common good."

While undoubtedly the members of the great convention of 1787 were fully aware of the frailty of human nature and the readiness of men in public station to yield to temptation and fall short of the highest standards of official competence and fidelity, it could hardly have occurred to them, or impressed itself upon them, we apprehend, that the national legislature, instead of being composed of the best-equipped and most trustworthy citizens, might in the indefinite future include but a few of that type and many of a quite different and decidedly inferior variety.

They could not have foreseen the rise and development of party politics as we know it today; nor could they have had any adequate conception or anticipation of the rapid increase of the population of the country, of the great tides of immigration that would beat upon its shores, the expansion of its territory, the growth of its wealth, the quite unimaginable extent of its natural resources.

The complaint heard so frequently today is that there is in our national legislature a deficiency of members of the highest standing and ability; that, instead of statesmen of the largest competence and highest attainments, there are too many "politicians," and persons of inferior and limited qualifications, principally interested in favoring schemes urged by groups of selfish men seeking governmental favors at the expense of the people, or concerned about some personal advantage, such as securing a re-election.

Others, members of the minority party, for example, seem to regard it as their special function to criticize the the party in power, which, of course, is natural enough, and endeavor by means both fair and unfair to embarrass its leaders, if there are any; impede or thwart their designs, damage the Administration as much as possible in the estimation of the people and so reduce its chances of receiving popular support at the polls.

It must be admitted, we think, that there are in the national legislature too many "politicians," as the term is familiarly used, and too few statesmen, who are more inclined to favor measures suggested and urged by groups, "blocs," minorities and supported by powerful extraneous influences, than to consider and guard the interests of the people as a whole, or to promote the general welfare.

Sent to the national capital to represent the great body of the people, most of whom cannot be constantly in communication with them, or shower upon them letters and telegrams whenever the Treasury is threatened by "raids," or other mischievous measures are under consideration, they seem to forget or to disregard the really great commission and trusteeship conferred upon them by popular election, and only too readily comply with the requests or yield to the demands of organized groups seeking to secure appropriations of the public funds or other resources of the nation for selfish or improper purposes, or in the interest of certain corporations, groups or localities.

That such a situation exists, it may be said, should not be regarded as anything unusual or surprising, or cause undue apprehension and disquietude, since experience has shown that such faults, such defects, such misconduct are generally to be expected of legislative bodies; that being, as they are, subject to many and diverse influences, it should occasion no surprise that they often proceed with insufficient deliberation to the enactment of ill-advised and even mischievous measures. Nor in the expenditure of the public funds is it reasonable, one may say, to expect that they will exhibit the prudence or exercise the restraint that a scrupulous regard for the taxpayers would seem to dictate.

Again, since the influences and forces opposed to the general welfare are generally more audacious and pertinacious than those wholly in the public interest, it should occasion no surprise that legislators not infrequently yield to the former. Organized groups of determined men with selfish ends in view and well-paid agents to work for them can always be counted on to be more active and effective in the furtherance of their schemes than those private citizens, small in number, who are concerned wholly with the prevention of legislation opposed to the public good. The few who have the time, the inclination and the energy to work steadily for the public, as opposed to special and private interests, often find it difficult, if not impossible, to compete successfully with the agents of the groups seeking to secure privileges and favors at the expense of the people.

The electorate, citizens generally, it is hardly necessary to say, know little or nothing about the proceedings of Congress, or the means and methods employed by the self-seeking groups and their agents to induce legislators to approve and enact their bills. Indeed, not very many citizens, we fancy, know the names of their Representatives in Congress. They, of course, do not read the Congressional Record, and not much of the newspaper accounts of the daily discussions in Congress.

How "to provide the means of enforcing accountability" and deepening the sense of responsibility in our legislators and in all public officials, for that matter, is a question that might profitably engage the attention of citizens.

It should not be expected that the representatives of the people, when they go to Washington, will at once and completely divest themselves of the pettinesses and sordidnesses of local party politics, or the habit of regarding important questions and problems of public concern from the "machine" point of view. Yet it should seem as if men of even small mental capacity and limited outlook, when chosen to represent districts, States and the nation itself, might feel an impulse and make an effort to rise above the low and unworthy plane of their wonted ways of thinking and acting; that they might experience a certain expansion or elevation of spirit and consider how serious an obligation and how honorable a trust had been conferred upon them.

To be commissioned to make laws for the people of the United States, with all that such a commission implies—this in itself might be expected to prompt in them a clear desire and eagerness to exhibit diligence and fidelity. And there are members of both houses of Congress of statesmanlike stature and attainments who are responsive to suggestions and receptive of influences of a higher and nobler sort, men of large experience and disciplined minds, who, conscious of the dignity and distinction of "the representative trust," are sincerely desirous of giving to the great problems of Government and questions of public policy the serious consideration which they merit.

That the citizens who constitute the electorate should choose certain of their fellow-citizens to make laws for them, entrust them with the power to provide by taxation means for the conduct of the Government, in a word, with "the power of the purse," and to discharge all the varied and important duties that devolve upon legislators of a great Federal Republic, and then that these their representatives should fail to manifest a fine sense of honor, fidelity to duty and loyalty to the trust committed to them—this surely cannot but be a grevious disappointment to thoughtful citizens and all those whose hopes for the progress of mankind are largely centred in the successful operation of representative Government.

HENRY E. GREGORY.
New York, Jan. 26, 1925.

McKINLEY AND STONEWALL.

To the Editor of The New York Times:

"Stonewall" Jackson saved the late and beloved President William McKinley for the nation. The incident, so far-reaching in the annals of American history, occurred at the Battle of Antietam, the "bloodiest day in American history."

Jackson, though a raging fighter on fields of battle, had a gentle heart and a high vision of justice. As the contending troops, the Blue and the Gray, struggled in deadly conflict on Antietam's battleground, they were separated by Sharpsburg Creek. One of Jackson's men was aiming his gun at a daring blue-clad boy whose intrepid courage had made him conspicuous. Jackson called in the nick of time:

"Stop, don't shoot! I have watched that youth for hours. He is too brave to be killed!"

The youth proved to be William McKinley.

In my chapter contributed to William C. Chase's "Story of Stonewall Jackson" I cited this occurrence during the tragic progress of that memorable battle on Maryland's historic soil as instancing the heart of heroism in Stonewall Jackson, whose gentleness was so strangely mingled with unconquerable courage.

On Jan. 21 we pay reverence to Stonewall Jackson, whose heroic soul responded to a youth's bravery and saved an outstanding statesman of sterling stamina—the martyred McKinley of immortal fame.

Strangely did the power of Fate give to our Republic the Ohio boy by the timely tenderness and justice of Jackson in that peril-fraught moment!

I recently watched the work of carving on the breast of Stone Mountain in De Kalb County, Ga. [illegible] a mighty memorial, eternally teaching all tomorrows, reaching many lives in many lands, as also visualizing a vision to posterity with a silent power, unperishing and perennial in its abiding beauty and living lesson.

On Jan. 21, Jackson's anniversary, our hearts should link McKinley's memory in love with our chieftain of Dixie! Victor Hugo truly said:

"Man may lay waste, man may destroy, man may kill; but the Summer remains Summer, the lily remains a lily, the star remains a star!"

Some years ago here in Macon I heard McKinley, in an oration that was a marvel of matchless simplicity, utter these words:

"Men and women are books, and events are life's vast volume of illustrations!"

Dickens said "Simplicity is the soul of elegance."

Civilization is the pause between impulse and action.

ARNOLD B. HALL.
Macon, Ga., Jan. 18, 1925.

"AN EDUCATED MAN."

To the Editor of The New York Times:

The editorial "What Is an Educated Man?" in THE TIMES presents a question of first importance. It merits much and deep consideration. Mr. Ramsay MacDonald expresses a fine sentiment, one worth much consideration, and your comments are in keeping with it. * * *

W. E. Chancellor says of the educated man, "He knows how to see things and what he sees; moreover, he can see through appearances to realities." If every one, and especially our great leaders in all spheres, would turn aside from the things that engross them and devote an occasional few minutes to calm contemplation of this and other pertinent points on the subject in "A Theory of Motives, Ideals and Values in Education" it would do much to lead us to living the Golden Rule, which only can effectually end war—in fact, all strife, whether between individuals, groups or great nations.

H. L. YOUNG.
New York, Jan. 26, 1925.

THE ORIGIN OF NEW YORK CITY

The Purchase of Manhattan Island From the Indians and the Early Dutch Colonizations Are Outlined

To the Editor of The New York Times:

M. K. Van Rensselaer's letter in your issue of Jan. 22 would seem to imply that there exists a doubt in the minds of many New Yorkers as to the date when Manhattan Island was purchased from the Indians and the area that purchase covered; also the date when the first white inhabitants gathered in the early settlement named New Amsterdam.

A consideration of a few salient events should set all such doubts at rest.

In the years immediately following the return in the late Fall of 1609 of Henry Hudson after his memorable voyage up the "Great River" (Hudson) Holland merchants sent vessels to trade with the Indians. Finding this trade profitable, the merchants of Amsterdam and Hoorn founded the New Netherlands Company, to which on Oct. 11, 1614, the States General granted a four years' monopoly of the fur trade in the New Netherlands.

This company was not a corporation but an association of merchants, each trading on his own capital. It possessed no colonization rights, and when its charter expired in 1618 a renewal was refused.

Late in 1614 the New Netherlands Company merchants built a trading block house called Fort Nassau on the upper end of Castle Island, just below Albany. In 1617 this fort was abandoned for a new one of the same name located on the Normanskill, two miles below Albany, which fort in turn was abandoned when the Dutch West India Company in 1622 built Fort Orange on the site of what is now the steamboat landing in Albany. These three trading posts were the only substantial buildings constructed on the shores of the Hudson River prior to 1626.

The Dutch West India Company, chartered June 3, 1621, claimed exclusive title to the territory comprising the present States of New York, New Jersey and Connecticut. Early in March, 1623, the company sent out as settlers thirty families of Huguenot-Walloons in the ship New Netherland, which arrived early in May and landed on Manhattan Island eight men, who joined a few scattered traders living in makeshift shelters.

Governor Peter Minuit arrived at Manhattan May 4, 1626, bringing with him a number of colonists. During the Summer of that year Minuit, representing and acting for the West India Company, purchased Manhattan Island from the Algonquin Indians. In a letter dated Nov. 5, 1626, P. Schagen, writing from Amsterdam, advises the States General at The Hague as follows:

> Here arrived yesterday the ship Arms of Amsterdam, which on the 23d September sailed from New Netherlands; * * * their wives have also borne children there. They have bought the island Manhattes from the savages for the value of sixty guilders. It is 11,000 morgens in extent.

This purchase was also confirmed in a communication of the same year from the West India Company to the Holland States General. That same Summer the building of a fort 250 feet long by 250 feet wide was begun but not completed until ten years later. A stone counting house was erected inside the fort, all other buildings being constructed of bark. At that period the West India Company jealously refused to sell any land whatever on Manhattan Island, not even for home building sites. This policy was later abandoned, and house lots were sold to the company's servants exclusively. Later the privilege to buy was extended to merchants, and some years later still the company consented to sell farm lands, changing their earlier policy of only leasing farms for six-year terms.

There is no record of the birth of Jean Virgin, who was undoubtedly born on Manhattan and died there in 1689, leaving no descendants. A prenuptial contract made in 1632 at the time his mother married her second husband refers to Jean as a child. From this we can infer that he could not have been born as early as 1614. Jean was probably a year or so older than Sarah Rapelye, born at Albany June 9, 1625.

Eleven thousand morgens of land, largely in excess of the total area of Manhattan, would seem to be strong testimony that the West India Company bought the entire island, of which they took undisputed possession.

Commencing the construction of Fort Amsterdam in the Summer of 1626, on the site of the present Custom House, was the first action that definitely located a centre on Manhattan Island around which gathered the small community that founded New York City. All existing evidence fixes 1626 as not only New York's birth year, but the year in which the embryo world metropolis first received the name New Amsterdam.

In suggesting a search for documents in Holland your correspondent must apparently have momentarily forgotten that the Legislature in 1841 authorized John Romeyn Brodhead to investigate and transcribe all papers and records relating to the early Colonial history of New York State that could be found in Holland, France and England. Mr. Brodhead spent three years in carrying out this work and the State published the papers under the title "Documents Relative to the Colonial History of New York."

Mr. Brodhead discovered, however, that unfortunately the West India Company in 1821 sold as junk all its papers and records of an earlier date than 1700. Consequently the most valuable of the original documents relating to the early history of Manhattan, including the deed from the Indians, is apparently no longer in existence.

DUNCAN H. SILL.
Northampton, Mass., Jan. 27, 1925.

AN INDIAN VIEW OF OPIUM.

To the Editor of The New York Times:

The thoroughgoing manner in which you have reported the opium conference in Geneva leads me to think that you will be interested to put before your readers the following extracts from The Bombay Chronicle, which may fairly be called the voice of the real India today, something far removed from John Campbell's India! Says the leader writer of The Chronicle of this gentleman:

> [His] unblushing misrepresentation of the attitude of India toward opium traffic continues unabated. * * * Mr. Campbell's outrageous commercialism is at variance with Indian sentiment. The only effective method by which the opium evil can be arrested is by firmly restricting the use of the drug to medicinal purposes only and by drastically reducing the area under cultivation. But the Government of India, with its expensive superior officers, derives a fat revenue from the opium monopoly and can ill afford to forego it, and India's "representative" seems to be placing every sort of obstacle in the way of the conference. * * * India's was the only minority vote against the resolution referring the American proposals to the First Committee for examination and report—Great Britain knowing well that this * * * was potent enough to block effectively any progress on these proposals.
>
> India thus through her "representative" is serving not only the bureaucracy here, but all foreign monopolists of the traffic as well, who fear that if the American proposals are adopted and enforced there would be an end of their immoral profits. * * * It is no wonder that the British Government of India should be moving heaven and earth to prevent the acceptance of the American proposals. In doing so it has not stopped at gross misrepresentation of the attitude of the people of this country toward the evil. * * * Mahatma Gandhi's telegram must have served not a little to open the eyes of the world, however, including the British public. The enormity of the wrong that their representatives in India are doing lies in exploiting a degenerate habit. * * *
>
> But the efforts of American humanitarians, combined with those of Indian leaders, are bound sooner or later to expose in all its naked hideousness the crime against humanity in which foreign opium monopolists in India and elsewhere are engaged, and to make it impossible to continue reaping profits out of the degradation and misery of human beings.

In view of the splendid fight that the United States made through its representative, such encouragement from the scene of poppy cultivation cannot but strike a sympathetic chord in the hearts of Americans. This is a fight against a vice that has now girdled the world, and an ever-growing vice, at that. Humanity says it must stop.

BLANCHE WATSON.
New York, Jan. 25, 1925.

RECOGNITION OF RUSSIA

To the Editor of The New York Times:

The European Governments refused to recognize the French Republic of 1793 because of its objectionable character. The Soviet Government of Russia is a government by and for the "proletariat." It repudiates the right of private property and of independent labor. It is maintained by terror created by its crimes. No Government could be more objectionable to a Government by all the people, for all the people, recognizing and protecting the sacred rights which the Soviet denies. Its existence is a menace to all other Governments, justifying its suppression.

No other reason should therefore be needed for a refusal to recognize it. But there is a stronger reason why the Government of the United States should steadily continue its refusal to accord the Soviet recognition. This reason is found in the persistent efforts of the Soviet Government to reduce all other Governments by internal force to its disastrous level. It is therefore practically in a state of war against the United States, though covertly prosecuted. Owing to the refusal of our Government to recognize it, its opportunities are happily limited by acts of Congress; but if our Government accords recognition to its enemy, giving its numerous representatives diplomatic immunity, and giving it a legal centre in Washington from which to broadcast its propaganda of class hatred and to organize the disaffected, the opportunities it desires will be given. Recognition of the Soviet therefore would, to say the least, be the antithesis of a government of common sense, so strongly advocated by the President in the last election.

It is true that "all States owe it as a duty to their citizens to keep open the channels of intercourse, so that they may trade with and sojourn in every other State having a de facto existence"; but there is a higher duty, that of self-preservation, which requires a State "to avoid as far as possible whatever might cause its destruction or that of the State, which means the same thing."

Engagements of the Soviet Government not to wage its war against the Government of the United States in order to obtain the advantage of recognition would be merely "a scrap of paper" to be secretly avoided. A Government maintained by the violation of all moral standards, and which exerts itself to suppress all religion, can have no regard for its obligations and will not permit them to interfere with the prosecution of its vicious aims. This has been demonstrated in the matter of its recognition by France in the hope (vain as it seems) that it would thereby obtain an adjustment of the vast indebtedness of former Russian Governments to French citizens, and its recognition by the Labor Government of Great Britain. "When proof of facts is present what need is there of words."

HORACE STRINGFELLOW.
Montgomery, Ala., Jan. 25, 1925.

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How It Impressed Those Who Viewed It, and Their Accounts of the Strange, Unearthly Phenomena They Saw

To the Editor of The New York Times:

When New York beheld—from rooftop and window-sill, street corner and omnibus—the marvel and beauty of a flaming circle in the sky, the mind reverted to considerations of God and man, of religion and science.

Science, with all its startling and justly commendable progress, should all the more reasonably bring God and man into more intimate communion. Every advance in science ought to be an approach toward, not a retreat from, God. In its greatest discoveries it reveals and not conceals the grandeur and the unity of God's order and creation. Those that saw that ring of fire in the heavens last Saturday were prompt and sincere in their praise and wonder that human beings could predict with such nicety and accuracy the minute of the total eclipse. The development of mathematics and astronomy to so fine and precise a degree is, and rightly so, a fit subject for our wonder and our regard.

But there is another consideration. In our exaltation of science we should not permit it to eclipse our appreciation of God's unsurpassing mystery and might that so bewilderingly orders, regulates and controls the whole wide firmament—earth, sun, stars, moon and sky—that they in their turn fit and agree so unerringly, so relentlessly, so astoundingly true to the mathematical applications of man. Great souls, great intellects like Dante, saw this truth of unerring design, unvarying regulation, this harmonious conformity—this divine unity of creation. * * *

JEROME ROLAND O'CONNELL.
New York, Jan. 26, 1925.

The View From a Mountain.

To the Editor of The New York Times:

I have read the letter of P. M. Adler in today's TIMES, and beg leave to add some remarks of my own on the eclipse, which I witnessed from the same point, the top of Beacon Mountain, overlooking the Hudson, and very near the central line of totality.

Mr. Adler proves himself to have been a very close observer; but he omitted to mention the weird shadow bands which appeared with such distinctness on the snow about our post of observation. The conditions were all absolutely perfect for seeing every phenomenon, the air being crystal clear and our elevation being 1,400 or 1,500 feet. There was no wind to confuse us, and perhaps the nipping and eager air (said by one of the hotel men to be 4 below zero) may even have quickened our senses.

The shadow bands, according to Isabel M. Lewis, appeared to be moving from the southwest toward the northeast, both before and after totality. Some observers have said the bands go helter skelter, "every which way." Something more needs to be learned, I judge, on this point. They have not been seen on the wings of airplanes, but only on white surfaces on the earth, and must have to do with lines of different density in the air close to the ground, and might perhaps be affected by wind currents. There may even be some optical illusion about what some see.

As Mr. Adler says, there was not the least bit of color, yellowish or otherwise, in the corona itself during the whole duration of totality—and this was, where we stood, exactly one minute fifty-five and six-tenths seconds, by the computation of Mr. and Mrs. Lewis, and they must know, for they get out all that heart-breaking mass of computation in the Nautical Almanacs. This glory of the sun, the wonderful corona, was, in the high and clear atmosphere of this mountain top, of a pearly white radiance, such as might best be described in the words of one of the visions in the Book of Revelation concerning the glory of the heavenly Jerusalem. In fact, the thought in my mind was as if for the first time I was beholding the true glory of the sun; as if the ordinary glare of the noonday sun belonged, after all, to the earthly sphere, while the unearthly effulgence of the corona belonged to things purely heavenly.

None of our own party saw the approaching shadow coming from the west at the rate of a half mile or more per second; neither did Mr. Adler see it, though he describes the receding shadow, after totality, as being very impressive. We had gone to Beacon Mountain partly to see the shadow, traveling at such speed that one hour and forty-three minutes would suffice to carry it from Red Lake, Minn., to the Shetland Islands. All books and articles on eclipses had prepared us to be greatly awed by the appearance of this shadow of the moon, sweeping down to engulf us. But, in spite of high elevation and a world of snow, we saw nothing but darkness gradually closing down on the Hudson and the hills beyond.

H. O. DuBOIS.
New York, Jan. 27, 1925.

As Seen from a Train.

To the Editor of The New York Times:

Perhaps nowhere in the country was the eclipse witnessed under the same conditions as we saw it from Train No. 9 of the Delaware & Hudson Railroad as we crossed the Canadian border near Lacolle, Canada. Having no smoked glasses, or anything of that nature, to shield the eyes from the glare, the big 600 that was drawing the train furnished a thin smoke screen which made a perfect substitute for a glass. The exhibition was perfect, with the exception of a few thin clouds. The passengers rushed to that side of the train and we had quite an exciting time. It produced a twilight condition that was very interesting to observe.

R. A. KLINE.
New York, Jan. 26, 1925.

The Four Seconds' Delay.

To the Editor of The New York Times:

I find it stated in THE TIMES that the pull of the sun and planets on the moon can be calculated with precision, but for some unknown force the moon speeds up and slows down in an unaccountable fashion, and also that our otherwise faithful attendant at times gets somewhat off its course. For the reason that it has been figured out what effect the power of attraction of the sun and planets creates on the moon, why not also consider the intimate relation of the earth in its details toward its companion?

The four seconds' delay of the moon to the place of appointment should be easily explained as being lost during its transit across the American Continent, as no doubt these two projecting masses acted as a retaining force on the "flying maiden."

The Northern American Continent additionally, being the larger, will probably tend to distract the satellite, thus causing it also slightly to deviate from its course. Both of these irreproachable irregularities will be made right by the fair neighbor while hovering over the unobstructed Atlantic Ocean. * * *

PAUL GERLI.
New York, Jan. 26, 1925.

Seen in Manhattan.

To the Editor of The New York Times:

There still seems to be some doubt as to whether or not people below Ninety-sixth Street, Manhattan, saw the total eclipse and the corona. I was on the roof of my home, on the southwest corner of Ninety-first Street and Central Park West, and at 9:11 o'clock precisely for barely two seconds, if that much, the sun was totally eclipsed and I saw a flaming ring around the moon-covered sun. The three stars also were very plainly discernible.

CATHARINE KRAMER.
New York, Jan. 27, 1925.

With the Naked Eyes.

To the Editor of The New York Times:

I read an article today saying that "we astronomers were at fault in failing to emphasize that the spectator should see the total eclipse with the naked eyes." Having seen one partial eclipse and having read in your paper a statement from a well-known oculist saying not to use your eyes until almost time for the total eclipse, that the grandeur could then be seen at the fullest, I waited for the eventful moment. I saw the total eclipse, in all its wonderful array, with the naked eye. I felt as if I were being carried into the celestial bodies—into eternity. Such grandeur is indescribable. My advice would be—see a total eclipse with the naked eye. I never once used a film or smoked glass, but waited for the psychological moment—that awe-inspiring moment of a lifetime.

Mrs. KATHERINE NEAL SIMMONS.
New York, Jan. 27, 1925.

The Report of the Eclipse.

To the Editor of The New York Times:

With due respect for the valuable contributions concerning the solar eclipse from your especially engaged observers, may I be permitted to voice my thanks and appreciation of the account as given by one who is evidently one of your regular staff? It is my humble opinion that the article in your Sunday edition, unsigned, in the last column of Page 1, news section, is a chapter of history of literary value deserving of memorable recognition. The author made me see the eclipse with the eyes of mankind and said for me all and more than I was able to think when I observed it.

FATHER PATRICK.
New York, Jan. 27, 1925.

The Colors of the Corona.

To the Editor of The New York Times:

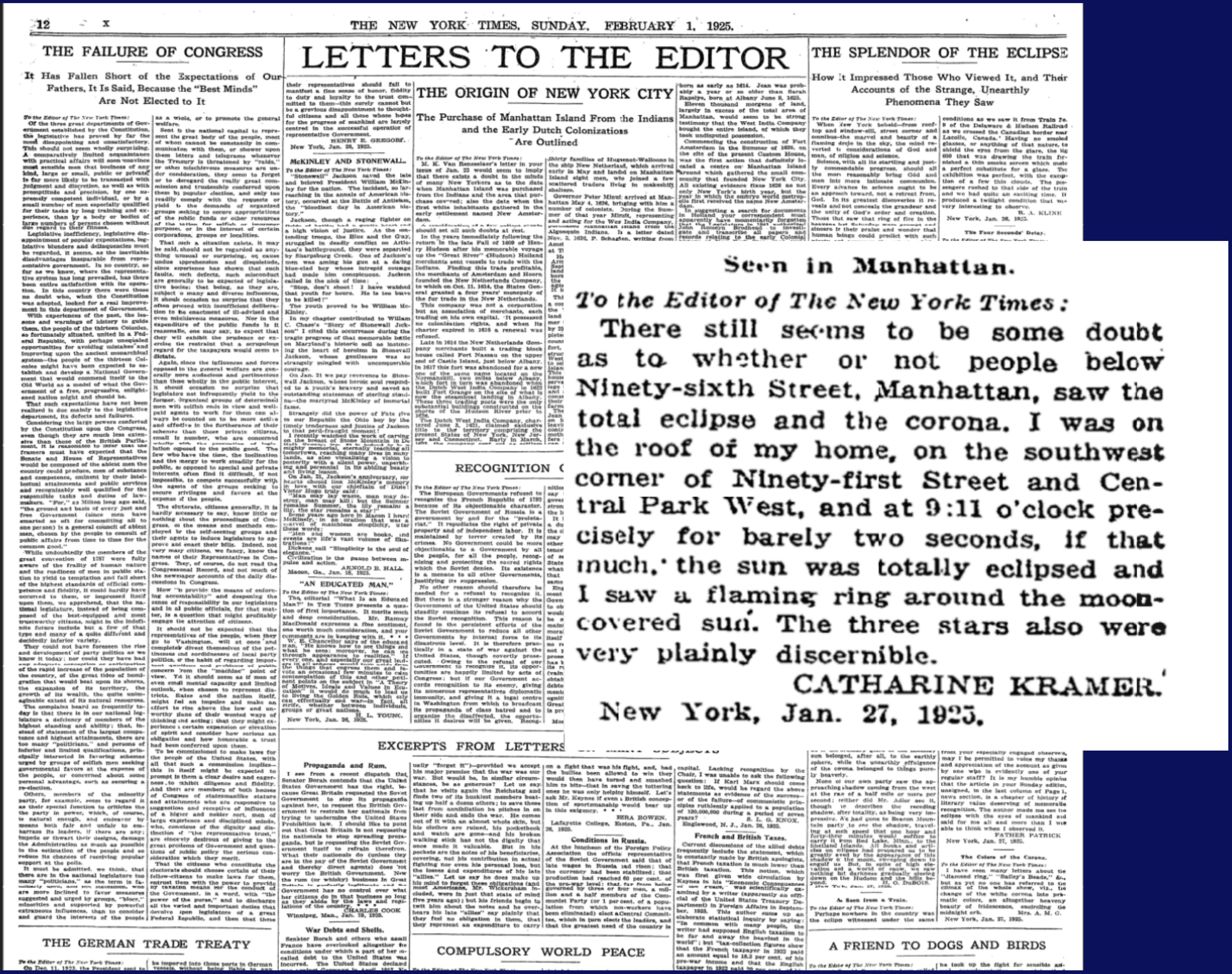
I have seen many letters about the "diamond ring," "Bailey's Beads," &c., but as yet no one has referred to the climax of the whole show, viz., the change of the white corona into prismatic colors, an altogether heavenly beauty of iridescence, encircling the midnight orb.

Mrs. A. M. G.
New York, Jan. 27, 1925.

A FRIEND TO DOGS AND BIRDS

To the Editor of The New York Times:

he took up the fight for sensible ani-



12 THE NEW YORK TIMES, SUNDAY, FEBRUARY 1, 1925.

LETTERS TO THE EDITOR

THE FAILURE OF CONGRESS

It Has Fallen Short of the Expectations of Our Fathers, It Is Said, Because the "Best Minds" Are Not Elected to It

THE ORIGIN OF NEW YORK CITY

The Purchase of Manhattan Island From the Indians and the Early Dutch Colonizations Are Outlined

THE SPLENDOR OF THE ECLIPSE

How It Impressed Those Who Viewed It, and Their Accounts of the Strange, Unearthly Phenomena They Saw

Seen in Manhattan.

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CATHARINE KRAMER.
New York, Jan. 27, 1925.

Gaia precision:

- At V=10, ω = 7 μas
- At V=15, ω = 12-25 μas
- At V=20, ω = 100-300 μas

At semimajor axis *a* = 5.2 AU:

- On average, 0.25 occultations per asteroid per year over the continental United States
- dx~75 m for one occultation over a V=15 Gaia star

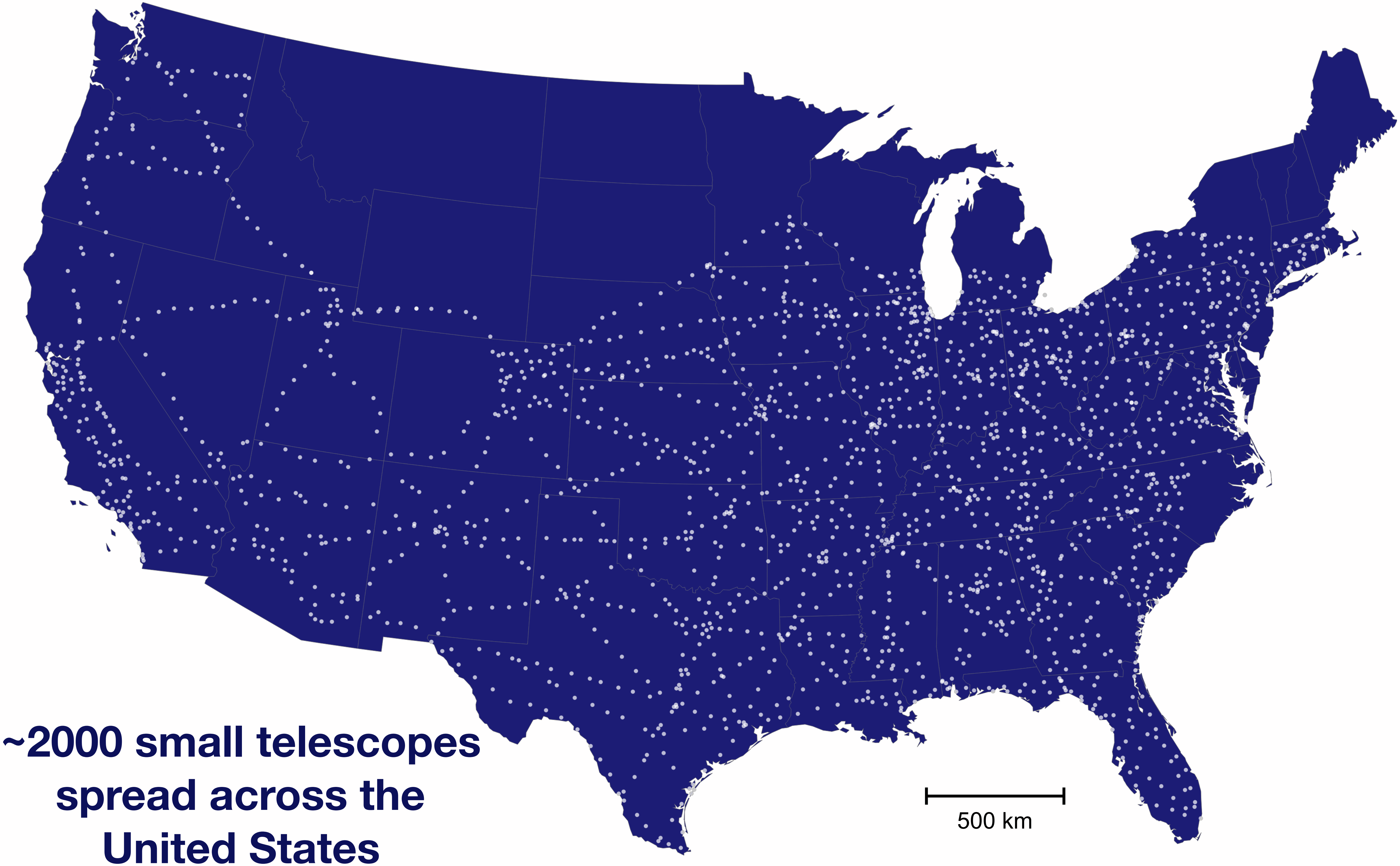
From 1 occultation:

$$\frac{\Delta a}{a} \sim 9.6 \times 10^{-11}$$

From N occultations:

Positional uncertainty improves as $\sqrt{N}$

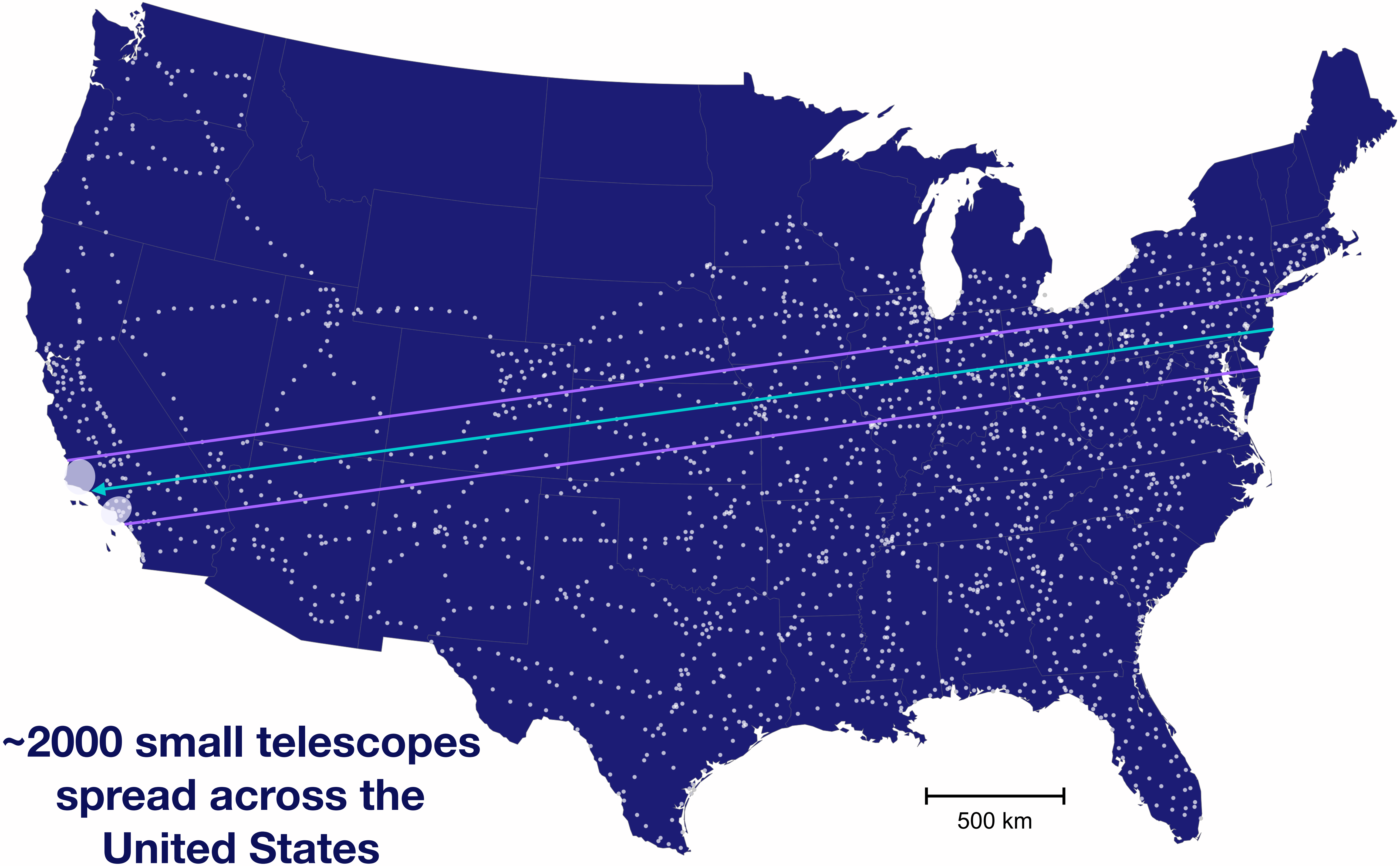
The cISP Occultation Network



~2000 small telescopes spread across the United States

Rice & Laughlin, 2019 (submitted)

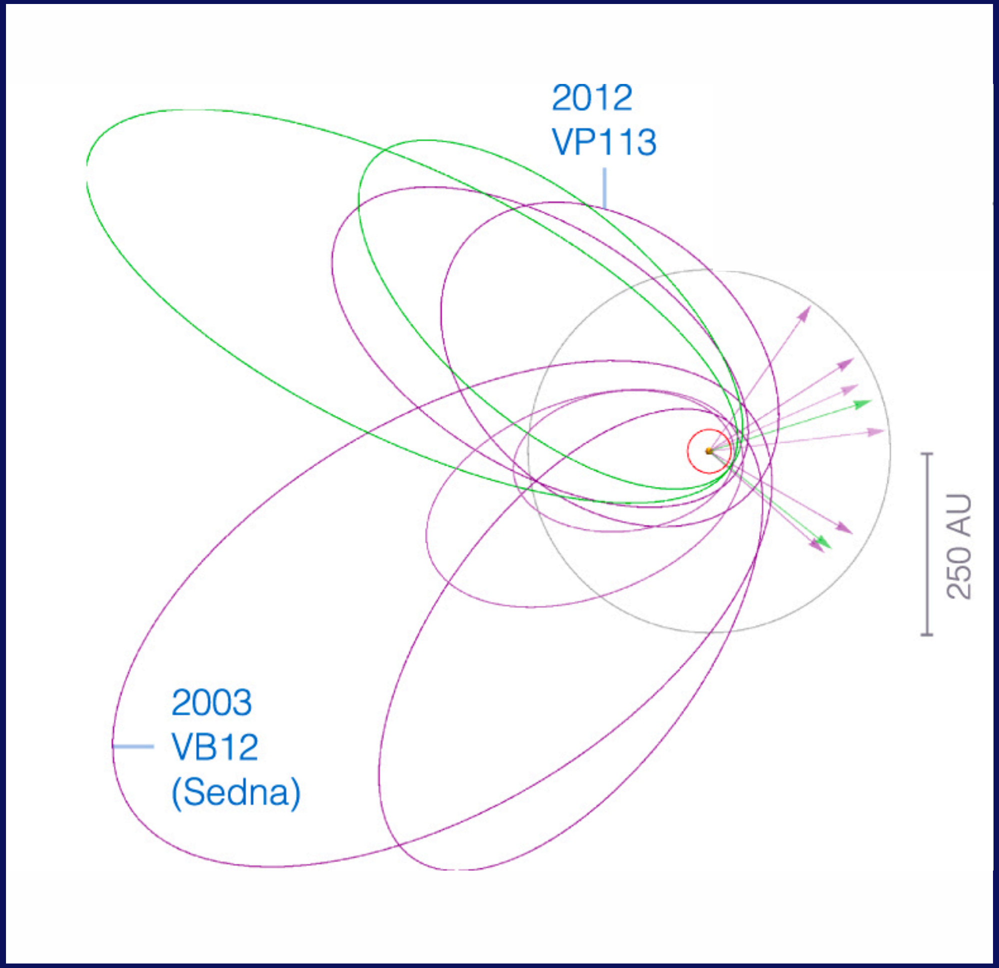
The cISP Occultation Network



~2000 small telescopes spread across the United States

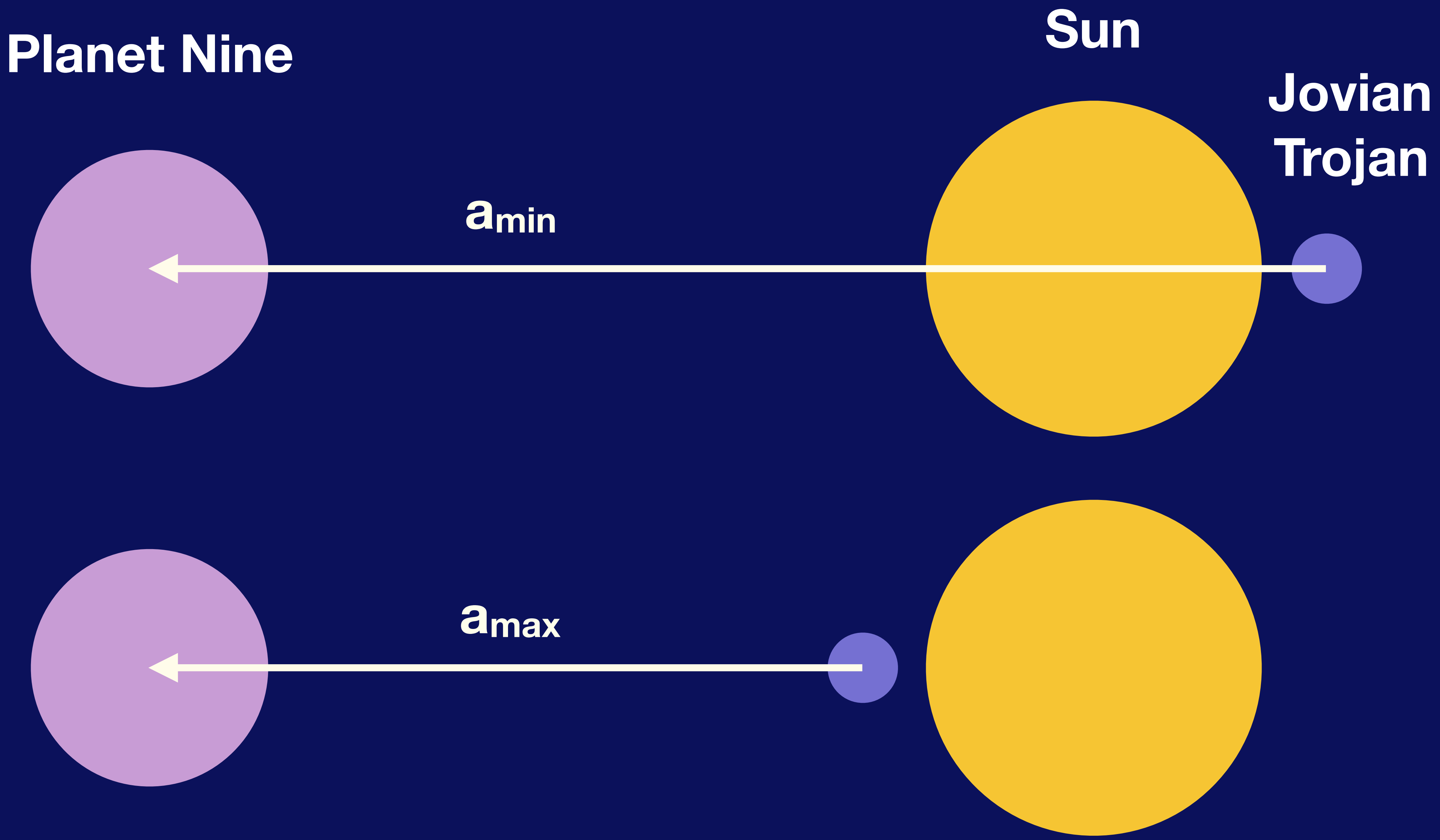
Rice & Laughlin, 2019 (submitted)

Planet Nine - A Brief Overview



Adapted from Batygin & Brown 2016

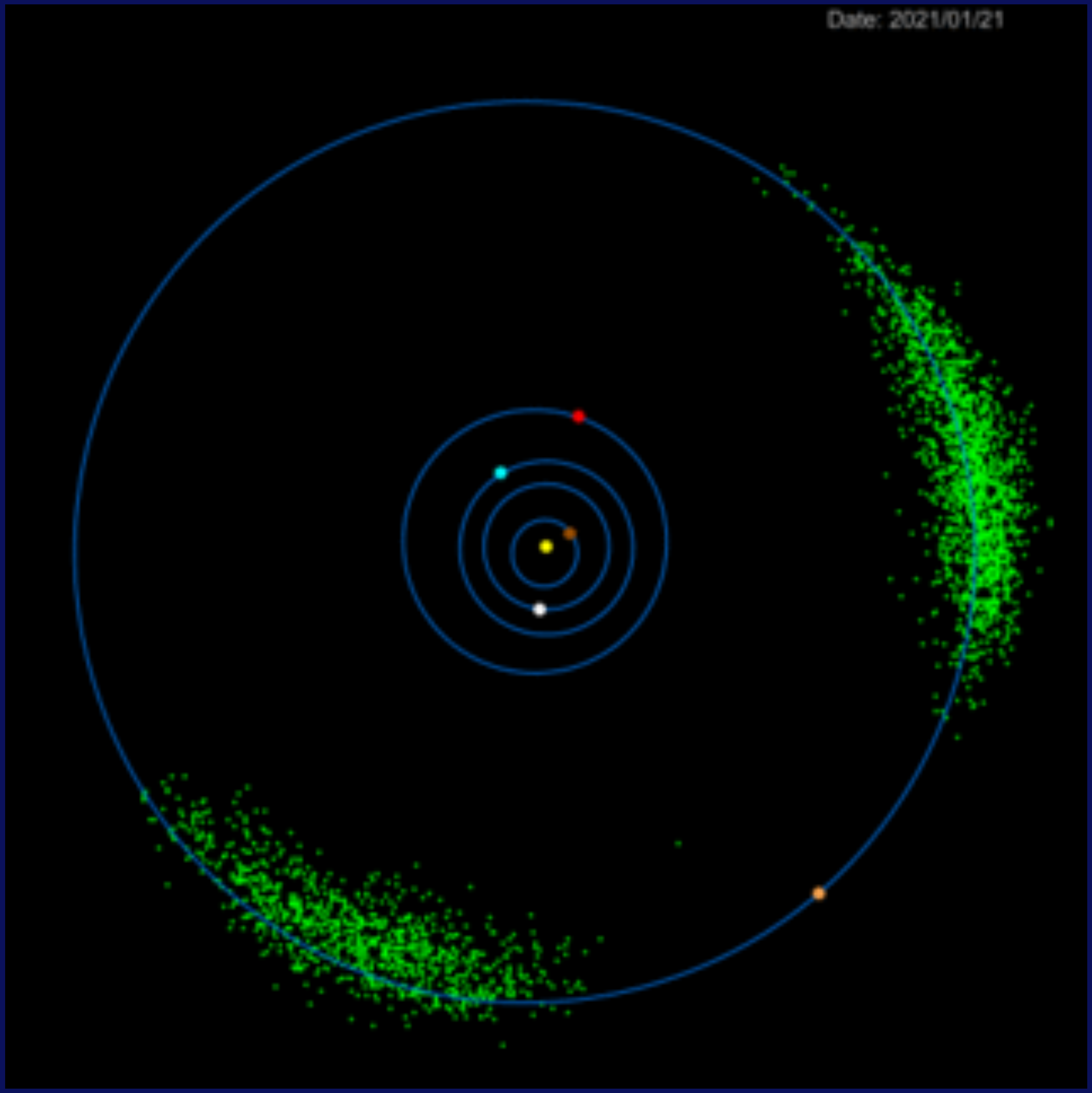
Parameter	Allowed Range
Semimajor axis	400-800 AU
Eccentricity	0.2-0.5
Inclination	15-25°
Mass	5-10$M_\oplus$



~10^5 Jovian Trojans with D≥2 km

(e.g. Jewitt et al. 2000, Yoshida & Nakamura 2005, Fernández et al. 2009)

Planet Nine



Credits: NASA Lucy mission website/Astronomical Institute of CAS/Petr Scheirich

For Planet Nine,

$$a = \frac{dGM}{r^3} \sim 3 \text{ x } 10^{-13} \text{ cm/s}^2$$

Over a 5-year time scale,

$$\Delta x = \frac{1}{2} a t^2 \sim 30 \text{ m}$$

Same order of precision to which solar system ephemerides are currently predicted

Orbital Element Evolution for $d\boldsymbol{F} = \bar{R}\hat{\boldsymbol{r}} + \bar{T}\hat{\boldsymbol{\theta}} + \bar{N}\hat{\boldsymbol{z}}$

$$\frac{da}{dt} = 2\sqrt{\frac{a^3}{\mu(1-e^2)}}\,[\bar{R}e\sin f + \bar{T}(1 + e\cos f)]$$

$$\frac{de}{dt} = \sqrt{\frac{a(1-e^2)}{\mu}}\,[\bar{R}\sin f + \bar{T}(\cos f + \cos E)]$$

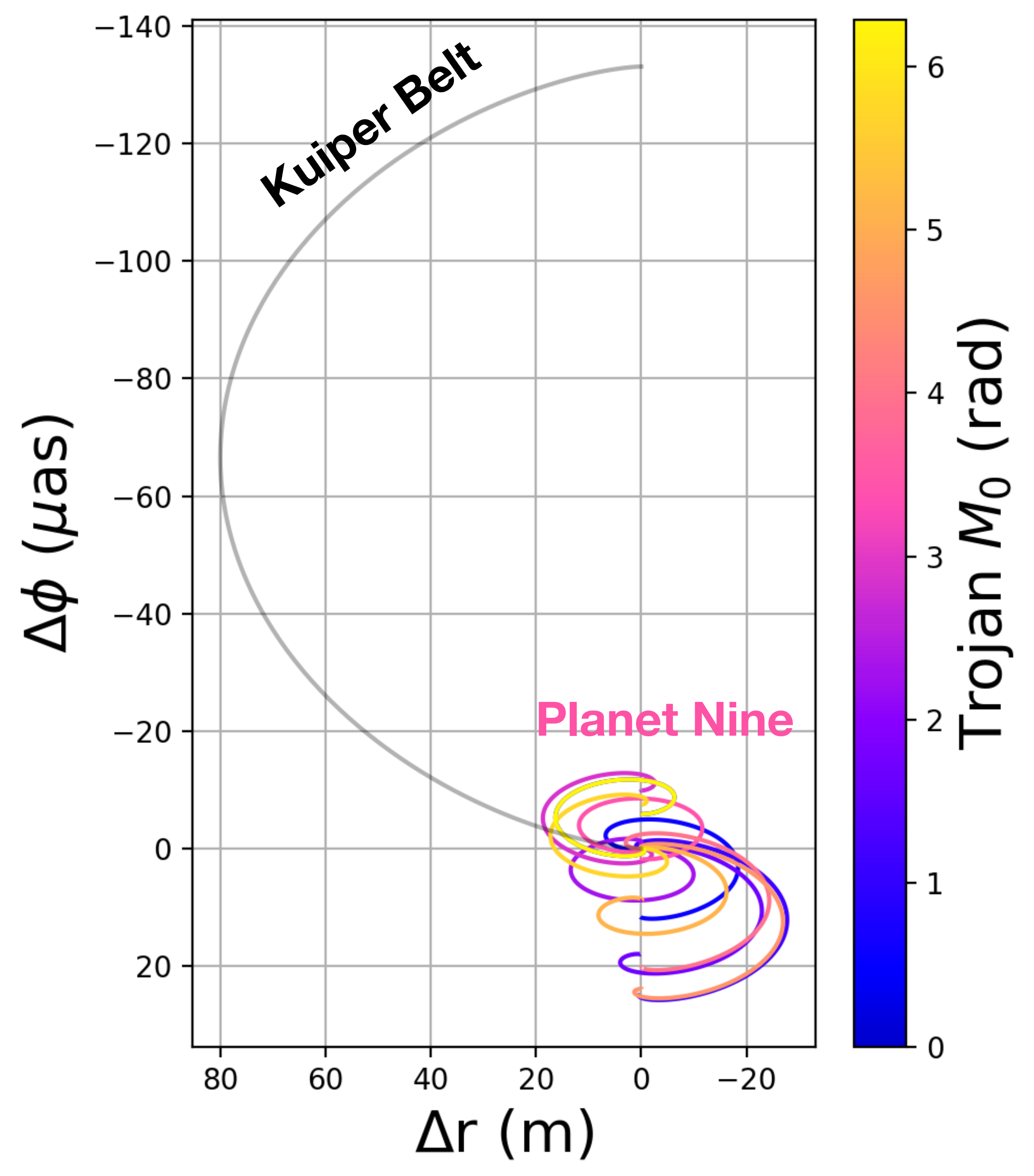
$$\frac{dI}{dt} = \sqrt{\frac{a(1-e^2)}{\mu}}\,\left[\frac{\bar{N}\cos(\omega+f)}{1+e\cos f}\right]$$

$$\frac{d\Omega}{dt} = \frac{r\bar{N}\sin(\omega+f)}{h\sin I}$$

$$\frac{d\omega}{dt} = \sqrt{\frac{a(1-e^2)}{\mu e^2}}\left[-\bar{R}\cos f + \bar{T}\sin f\,\frac{2+e\cos f}{1+e\cos f}\right] - \dot{\Omega}\cos I$$

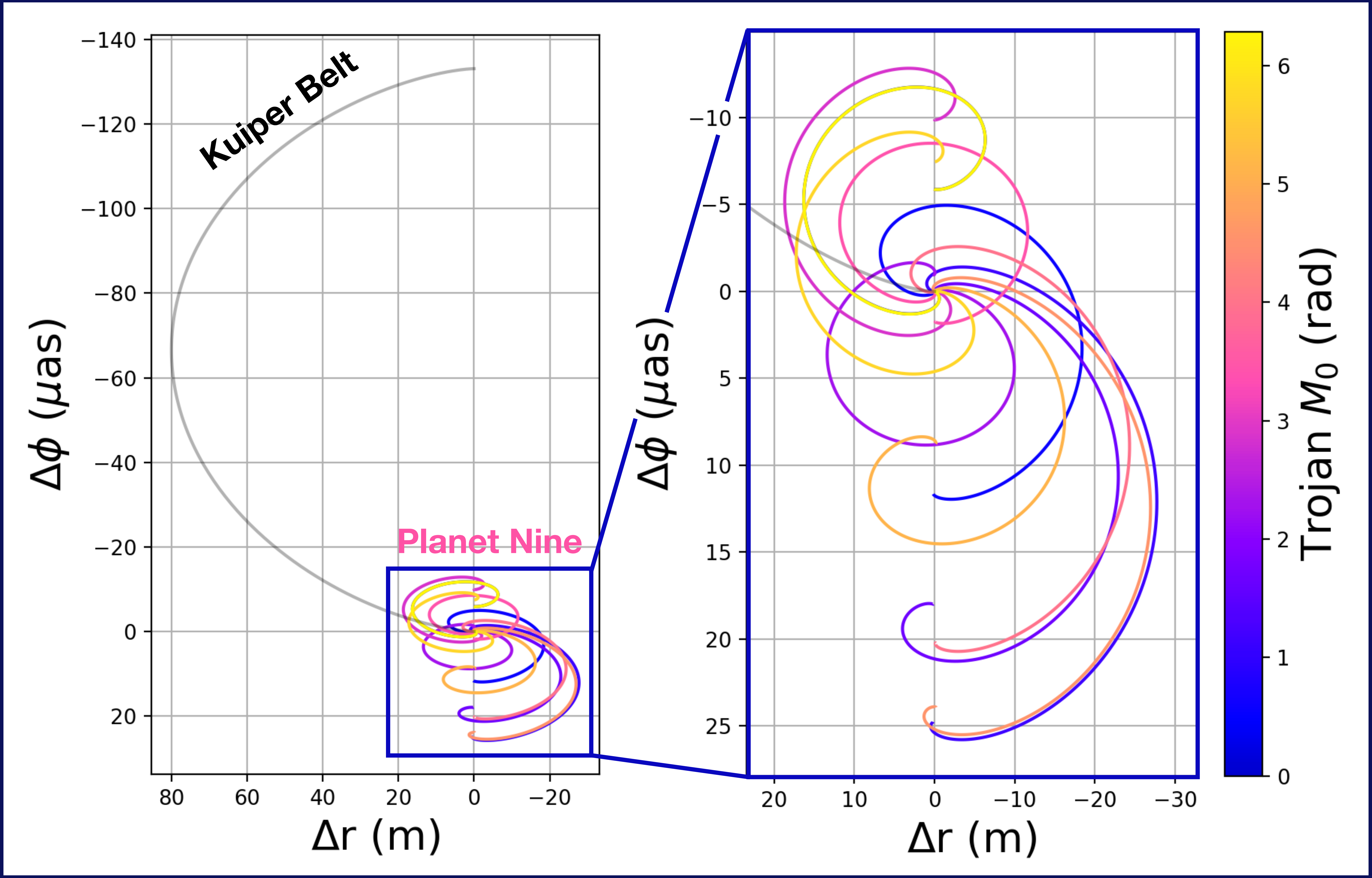
$$\begin{aligned}\frac{d\tau}{dt} &= \left[3(\tau-t)\sqrt{\frac{a}{\mu(1-e^2)}}\,e\sin f + a^2\frac{(1-e^2)}{\mu}\left(\frac{-\cos f}{e} + \frac{2}{1+e\cos f}\right)\right]\bar{R} \\ &+ \left[3(\tau-t)\sqrt{\frac{a}{\mu(1-e^2)}}\,(1+e\cos f) + a^2\frac{(1-e^2)}{\mu}\left(\frac{\sin f\,(2+e\cos f)}{e(1+e\cos f)}\right)\right]\bar{T}\end{aligned}$$

Zero Trojan eccentricity



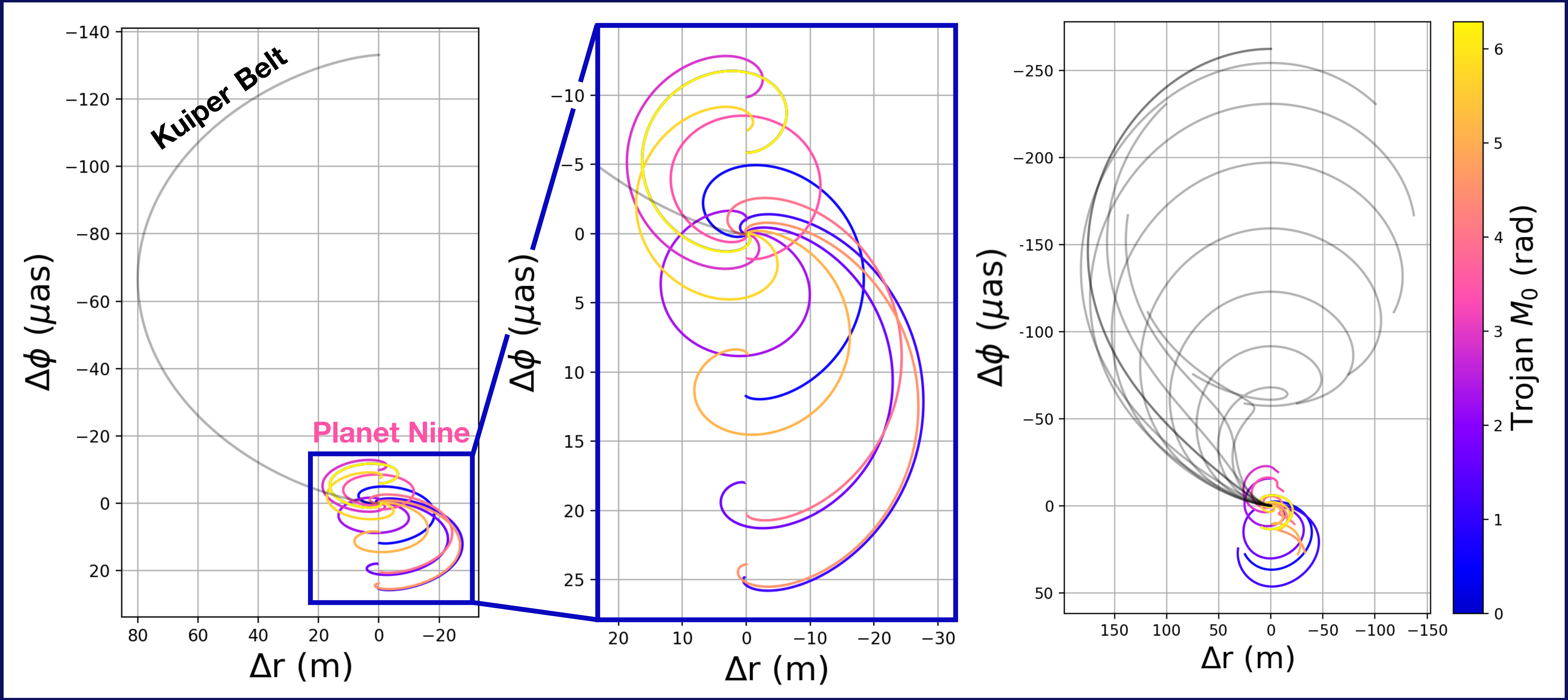
Rice & Laughlin, 2019 (submitted)

Zero Trojan eccentricity

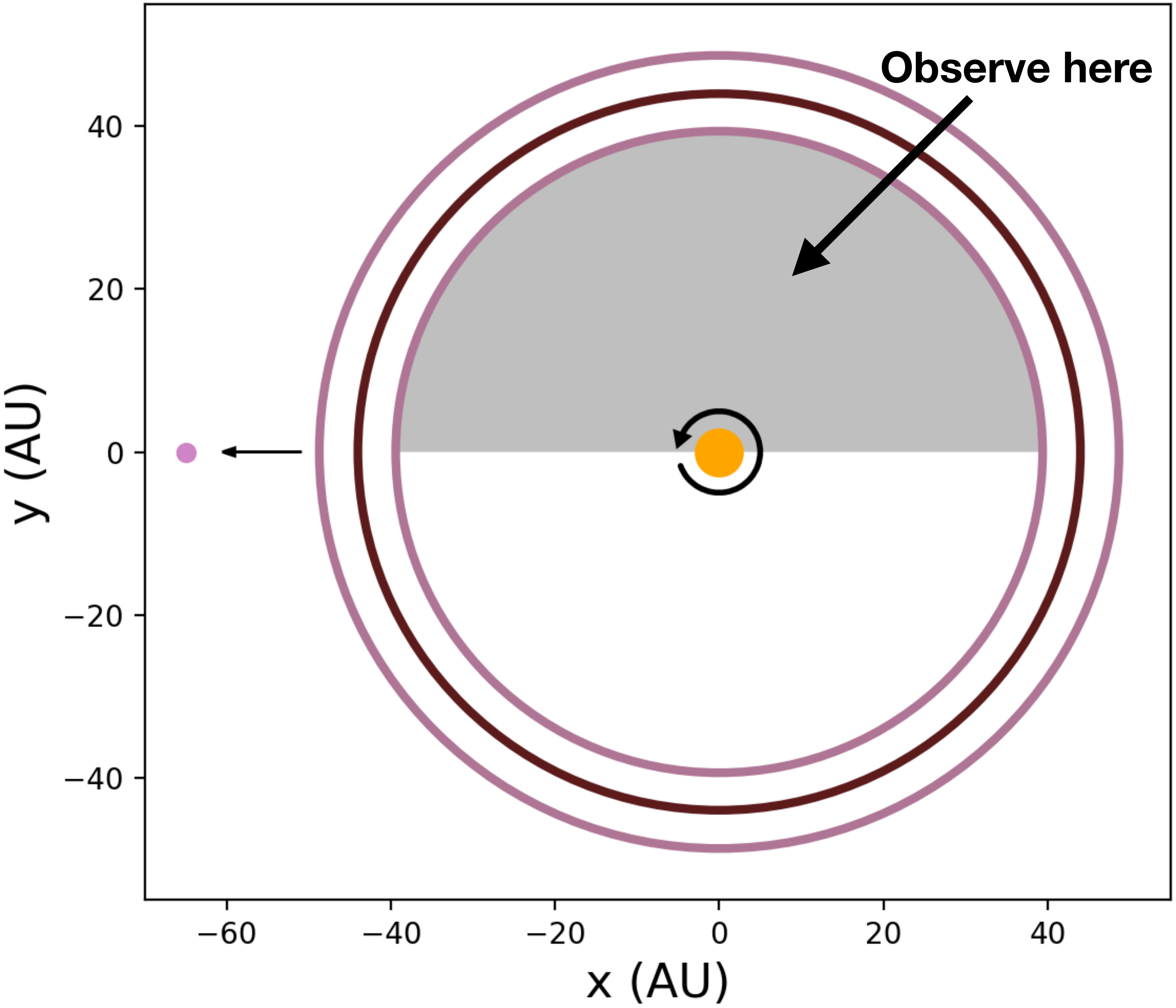


Rice & Laughlin, 2019 (submitted)

Zero Trojan eccentricity **Nonzero Trojan eccentricity**



Rice & Laughlin, 2019 (submitted)


Observe here
40
20
0
−20
−40
y (AU)
−60
−40
−20
0
20
40
x (AU)

cISP Network Overview

- cISP occultation network: ~2000 small telescopes across the continental United States.
- Occultations provide detailed information about asteroid sizes, shapes, and positions.
- Tracking tidal perturbations of ~10^5 Jovian Trojans with $D \geq 2$ km can convincingly confirm the existence or non-existence of Planet Nine over time span t~5 years.
- This network is a novel and timely opportunity in the Planet Nine search, drawing from New Horizons, LSST, and Gaia.