

ARE THE PLANETS INHABITED?

Could there truly be life outside ours?

BY E. WALTER MAUNDER, F.R.A.S.

SUPERINTENDENT OF THE SOLAR DEPARTMENT, ROYAL OBSERVATORY GREENWICH

THE QUESTION STATED – Part 1

THE first thought that men had concerning the heavenly bodies was an obvious one: they were lights. There was a greater light to rule the day; a lesser light to rule the night; and there were the stars also.

In those days there seemed an immense difference between the earth upon which men stood, and the bright objects that shone down upon it from the heavens above. The earth seemed to be vast, dark, and motionless; the celestial lights seemed to be small, and moved, and shone. The earth was then regarded as the fixed centre of the universe, but the Copernican theory has since deprived it of this pride of place. Yet from another point of view the new conception of its position involves a promotion, since the earth itself is now regarded as a heavenly body of the same order as some of those which shine down upon us. It is amongst them, and it too moves and shines—shines, as some of them do, by reflecting the light of the sun. Could we transport ourselves to a neighboring world, the earth would seem a star, not distinguishable in kind from the rest.

But as men realized this, they began to ask: “Since this world from a distant standpoint must appear as a star, would not a star, if we could get near enough to it, show itself also as a world? This world teems with life; above all, it is the home of human life. Men and women, gifted with feeling, intelligence, and character, look upward from its surface and watch the shining members of the heavenly host. Are none of these the home of beings gifted with like powers, who watch in their turn the movements of that shining point which is our world?”

This is the meaning of the controversy on the Plurality of Worlds which excited so much interest some sixty years ago, and has been with us more or less ever since. It is



the desire to recognize the presence in the orbs around us of beings like ourselves, possessed of personality and intelligence, lodged in an organic body.

This is what is meant when we speak of a world being “inhabited.” It would not, for example, at all content us if we could ascertain that Jupiter was covered by a shoreless ocean, rich in every variety of fish; or that the hard rocks of the Moon were delicately veiled by lichens. Just as no richness of vegetation and no fulness and complexity of animal life would justify an explorer in describing some land that he had discovered as being “inhabited” if no men were there, so we cannot rightly speak of any other world as being “inhabited” if it is not the home of intelligent life. If the life did not rise above the level of algæ or oysters, the globe on which they flourish would be uninhabited in our estimation, and its chief interest would lie in the possibility that in the course of ages life might change its forms and develop hereafter into manifestations with which we could claim a nearer kinship.

On the other hand, of necessity we are precluded from extending our enquiry to the case of disembodied intelligences, if such be conceived possible. All created existences must be conditioned, but if we have no knowledge of what those conditions may be, or means for attaining such knowledge, we cannot discuss them. Nothing can be affirmed, nothing denied, concerning the possibility of intelligences existing on the Moon or even in the Sun if we are unable to ascertain under what limitations those particular intelligences subsist. Gnomes, sylphs, elves, and fairies, and all similar conceptions, escape the possibility of discussion by our ignorance of their properties. As nothing can be asserted of them they remain beyond investigation, as they are beyond sight and touch.

The only beings, then, the presence of which would justify us in regarding another world as “inhabited” are such as would justify us in applying that term to a part of our own world. They must possess intelligence and consciousness on the one hand; on the other, they must likewise have corporeal form. True, the form might be imagined as different from that we possess; but, as with ourselves, the intelligent spirit must be lodged in and expressed by a living material body. Our enquiry is thus rendered a physical one; it is the necessities of the living body that must guide us in it; a world unsuited for living organisms is not, in the sense of this enquiry, a “habitable” world.

The discussion, as it was carried on sixty years ago by Dr. Whewell and Sir David Brewster, was essentially a metaphysical, almost a theological one, and it was chiefly considered in its supposed relationship to certain religious conceptions. It was urged that it was derogatory to the wisdom and goodness of the Creator to suppose that He would have created so many great and glorious orbs without having a



definite purpose in so doing, and that the only purpose for which a world could be made was that it might be inhabited. So, again, when Dr. A. R. Wallace revived the discussion in 1903, he clearly had a theological purpose in his opening paper, though he was taking the opposite view from that held by Brewster half a century earlier.

For myself, if there be any theological significance attaching to the solving of this problem, I do not know what it is. If we decide that there are very many inhabited worlds, or that there are few, or that there is but one—our own—I fail to see how it should modify our religious beliefs. For example: explorers have made their way across the Antarctic continent to the South Pole but have found no “inhabitant” there. Has this fact any theological bearing? or if, on the contrary, a race of men had been discovered there, what change would it have made in the theological position of anyone? And if this be so with regard to a new continent on this earth, why should it be different with regard to the continents of another planet?

The problem therefore seems not to be theological or metaphysical, but purely physical. We have simply to ask with regard to each heavenly body which we pass in review: “Are its physical conditions, so far as we can ascertain them, such as would render the maintenance of life possible upon it?” The question is not at all as to how life is generated on a world, but as to whether, if once in action on a particular world, its activities could be carried on.

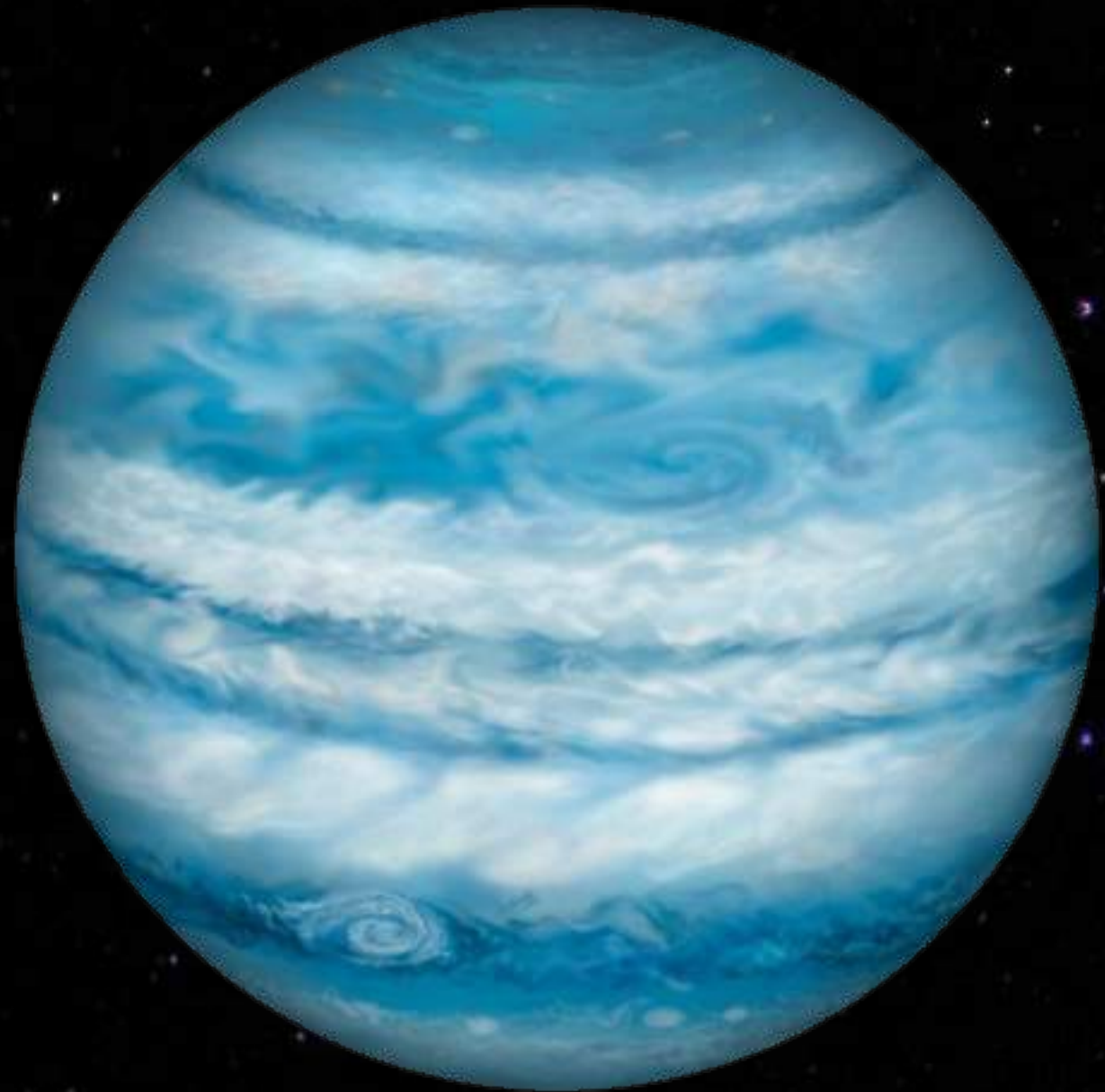
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Signature Pastas!

Pesto Amore:

Fettuchine pasta with a generous helping of our specialty pesto recipe..... \$7.99

Pepper Pasta:

Spaghetti pasta drenched in our homemade spicy marinara recipe mixed with Pepperonchini and Italian Sausage, not advised for those without an asbestos tongue..... \$6.99

Lasagnamore:

Authentic Italian lasagna served with layers of 100% real beef, shredded mozzarella, and zesty marinara..... \$8.99

Clamore:

Spaghetti, basil, tomato, and spinach surrounded by locally raised clams safely shucked of all sand for the best dining experience..... \$11.99

Pizza!

Sizes: Personal (\$2.99), Small (\$4.99), Medium (\$6.99), Large (\$9.99), X-Large (\$12.99), XX-Large (\$14.99).

Toppings: Pepperoni, Italian Sausage, Portabella mushrooms, anchovies, green peppers, red peppers, yellow peppers, jalapeno peppers, habanero peppers, pepperonchini peppers, white chicken, bacon, white margherita, onions... \$0.99 per extra individual topping type.

Cheeses: Mozzarella, Provolone, Cheddar, Emmental.

Soups & Chowders! (\$4.99 each)

Chicken Noodle, Minestrone, Chicken and Gnocchi, Tomato Basil, Lobster Bisque, New England Clam Chowder, Haddock Chowder, Black Bean, Vegetarian, Beef Chowder, Pea, Chowder Amore!



Burgers, Subs, and Sandwiches!

BLT:

Crispy bacon, Crispier lettuce, and the crispiest tomatoes topped with our homemade mayonnaise..... \$5.99

Classic Hamburger:

100% beef patty topped with pickles, tomatoes, American cheese, red onions, ketchup, mustard, mayonnaise, and a dash of salt..... \$6.99

Steak N' Cheese Calzone:

100% natural shredded steak melted together with American, provolone, and swiss cheese, infused with caramelized onions and a dash of Tabasco hot sauce.....\$8.99

Italian Sub:

A foot-long sub of Spicy salami, provolone cheese, ham, pepperoni, red onions and pickles..... \$8.99

Tuna Melt:

100% natural tuna fish with hearty slices of American cheese melted right into it; topped with crisp, fresh lettuce and tomato..... \$4.99

Super Spicy Burger:

Two beef patties, red onions, lettuce, and American cheese topped with a handful of jalapeno peppers, snips of habanero peppers, and a dash of ground up carolina reaper pepper, only the truly asbestos tongued should try this deadly little number!.....\$10.99

Drinks! (\$0.99 each, free refills!)

(All beverages are products of the Coca-Cola Corporation)

Coca-Cola, Diet coke, Barq's Root Beer, Sprite, Minute Maid Lemonade, Minute Main Pink Lemonade, Dasani water, Fuze tea, Fresca.

A Timeless Slab-Serif

Clarendon

The Clarendon font was invented by Robert Besley in 1845 to be used by Fann Street Foundry, the company that Besley worked for since 1826 and was recently made a partner in the firm.

It is typically considered to be one of the first ever registered fonts, having been done so in 1845. Besley later became lord mayor of London.

This font was well received and is in common use to this very day. It can be found in the logo for Sony, People Magazine, and Tonka.

Clarendon is a slab-serif typeface best shown by its block-like serifs, as opposed to the more common curved and circular serifs, which still do appear here. There is little-to-no difference in thickness throughout the given letter. Thanks to its consistent design, Clarendon remains timeless and practical in large prints, no legibility is lost!

Common characteristics of Clarendon include: angular, square serifs and brackets, low contrast in thickness, short descenders and ascenders, a tall x-height, and hints of rounded stress on lowercase letters.

a b c d e f g h i j k l m n o p q r s t u v w x y z
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
1 2 3 4 5 6 7 8 9 0 ! @ # \$ % ^ & * () - _ = + < > , . ? / ` ~ [] { } ; ' : " \ |

Sources:

- www.myfonts.com/fonts/linotype/clarendon/
- <http://idsgn.org/posts/know-your-type-clarendon/>
- <https://www.fonts.com/content/learning/fontology/level-1/type-families/slab-serifs>
- <https://charlottemartindesigns.wordpress.com/2014/11/03/characteristics-of-clarendon/>



Clamore



Lobster Bisque



BLT (Bacon, Lettuce, Tomato)

Pasta!

<i>Pesto Amore!</i>	<i>\$7.99</i>
<i>Pepper Pasta!</i>	<i>\$6.99</i>
<i>Lasagnamore!</i>	<i>\$8.99</i>
<i>Clamore!</i>	<i>\$4.99</i>

Soups and Chowders!

<i>Chicken Noodle</i>	<i>\$4.99</i>
<i>Tomato Basil</i>	<i>\$4.99</i>
<i>Lobster Bisque</i>	<i>\$4.99</i>
<i>Chowder Amore!</i>	<i>\$4.99</i>

Sandwiches!

<i>BLT</i>	<i>\$5.99</i>
<i>Italian Sub</i>	<i>\$8.99</i>
<i>Hamburger</i>	<i>\$6.99</i>
<i>Tuna Melt</i>	<i>\$4.99</i>

And that's just a few of what we have to offer! To get the full roster, come on down to *Pasta Amore!*



So come on down and have a bite at Pasta Amore!™

Our main mission is To provide a warm atmosphere for your family where we can share the traditional cuisines of Italy. Our food will always be fun, fresh and filled with love!



“The best meal i’ve had in many days.”

- Elliot Sharper, *New England Gabber*, March. 7, 2016

Pasta Amore combines the cooking traditions and ingredients of Italy with creativity, providing a modern twist on timeless classics.

Our vision for the future is to grow and learn along with our customers. In doing so, we aim to provide an atmosphere that enables this growth and fuels the passion that lives within the essence of the brand.

The approach of Pasta Amore is to develop our brand with the understanding of both our culture and consumer insights. Within our vision always lives the promise of inspiring creativity, conversation and quality.

Need more information? Contact us!
Info@PastaAmore.com



Authentic
Italian
Cuisine!

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SONY Northern ANTIQUE Mountains SUMMER ATTITUDE
TOWN-SQUARE Rocky
A A A A

I HAVE TOO MUCH
BLOOD IN MY
COFFEE STREAM



XX-Large Pizza.....\$14.99

Chowder Amore.....\$4.99

Pasaganmore.....\$8.99

Pepper Pasta.....\$9.99

Pesto Amore.....\$7.99

Signatures!



*See what signatures
we've got for
YOU!*

542 Emeraldtree Road
1-555-584-0091

November

2016

SU	M	T	W	TH	F	S
Oct. 30	Oct. 31 Begin Module 2 (calendar create)	1	2	3 Submit post for discussion board	4	5
6 End of Module 2	7 Begin Module 3 (table tent)	8	9	10 Submit post for discussion board	11	12
13 End of Module 3	14 Begin Module 4 (menu design)	15	16	17 Journal should be done by here	18	19
20 End of Module 4	21 Begin Module 5 (cover swap)	22	23	24 Submit post for discussion board	25	26
27 End of Module 5	28 Begin Module 6 (brochure rough)	29	30	Dec. 1 Journal should be done by here	Dec. 2	Dec. 3

Awesome Apartments!

The best living spots for less!

**This month's
\$1000 per month or
less choices!**

**Montana: 2-bedroom
apartments!**

**New England: places
with basements?!**

**How "Hyper Homes"
might not be the pick!**

**Exclusive interview:
Creator of the hit reality show:
House Haberdashery: Bill Dahowz**

