

UFO PHYSICS - I

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AS part of an attempt to extract as much information as possible from the available case histories, James M. McCampbell has given us an admirable survey of physical phenomena associated with UFO manifestations.¹

In the following series of articles a number of additional physical phenomena, not dealt with in (1), will be discussed and references to representative cases will be given. There is every reason to believe that the phenomena under discussion correspond to objective facts.

The true character of the physical mechanisms involved is at present unknown. This doesn't mean some of them couldn't be explained in terms of contemporary physics. See again (1) and also (2) for a number of most interesting attempts in this direction, in which emission of microwaves by UFOs plays an important role. The biggest part of UFO physics, however, almost certainly falls well outside the explanatory reach of current physical theories.

A good example is offered by the extraordinary accelerations routinely exhibited by UFOs (Compare with (1), chapter 7. See also part II, 4 of this article).

In several cases one has been able to estimate the weight of UFOs from the depth of the landing traces they left and the hardness of the soil.

A convenient measure for this weight turns out to be the ton. Nevertheless such a heavy machine often manages to leave the field of vision of the observer in a very few seconds or even less. In case (3) for example an object which must have weighed several tens of tons while standing on the ground slowly ascended to a height of about 80 to 100 metres, apparently to get clear of surrounding obstacles (an often observed behaviour), after which it accelerated and disappeared from view in 2 or 3 seconds.

Weight is proportional to gravitational mass and, according to the weak equivalence principle, gravitational mass is strictly equal to inertial mass⁴. In our case this leads to the inevitable conclusion that a heavy UFO must be correspondingly inert, which is effectively incompatible with the quiet way in which UFOs attain their extreme accelerations. On the contrary, they give no evidence of using any brute force propulsion system.

There seems to be only one way out: UFOs are able to reduce their inertial mass almost to zero. This would enable them to dart around like a fly with very little power consumption. Moreover, according to the weak equivalence principle mentioned before, such a reduction in inertial mass must give an equal reduction in gravitational mass (weight). And this would account nicely for their often observed ability to hover effortlessly for long periods of time.

All this sounds very pleasing, but special relativity theory teaches us that inertial mass is equivalent to energy. In reducing its inertial mass the UFO must get rid of an enormous amount of energy. It cannot radiate it away. An atomic bomb would be child's play compared to that, and nothing would remain of the UFO itself. How then does it do it, even while maintaining its original structure, or so it seems?

The four laws used, the weak equivalence principle, the law of conservation of momentum, the equivalence of inertial mass and energy and the principle of conservation of energy, are among the best tested laws of physics.

We have a stalemate here, and the chance that this stalemate can be resolved within the limits of current theory is remote indeed.

If the reader takes a look at the phenomena listed below he will realize that the same applies to virtually all of them. In a future article I hope to examine

UFO related physical phenomena from the standpoint of parapsysics.

Because some parapsysical phenomena can be studied in the laboratory while UFOs cannot, any correspondence between the two fields could be of practical value to ufology. Of course, parapsysics isn't the most successful of sciences. Since Reichenbach's monumental researches more than a century ago progress has been disappointingly small. No theoretical framework exists. Experimentation is hampered by elusive subjective factors. Nevertheless there can be hope that one day all this will be different.

One last remark:

The study of the physical aspects of UFO manifestations will never disclose to us, of course, the real nature of the phenomenon. But what it can show us is that the physical background of UFOs is nothing less than awe-inspiring and absolutely non-trivial. It is no unwarranted extrapolation to think that the same two qualifications a fortiori apply to the UFO phenomenon as a whole. Reading these articles and studying the references the reader will, I hope, realize (if he didn't do so already) that all theories proposed so far to explain UFOs and their behaviour are ill-founded, uninteresting and even ridiculous if viewed in the light of the sheer impressiveness of the evidence.

Although we know a lot more about their phenomenology than we did thirty years ago, we are as far from understanding UFOs as ever, that is we understand nothing. We had better get used to the idea that it will stay that way for a long time to come.

UFO related physical phenomena

As already said, only physical effects/mechanisms not covered in (1) are listed. No claims to completeness in any sense is made, nor to much originality. This is a

compilation entirely based on the work of others (see references).

I have refrained from summarizing the case histories. The original stories are infinitely more interesting and rich in relevant detail than summaries could ever be.

I would appreciate it very much if readers would bring to my attention any good cases giving further evidence of the phenomena listed below. My address is: Hofgeest 241, Amsterdam, Holland.

1. Emission of slowly propagating luminous beams ('solid light')
In a number of cases UFOs have been observed to emit slowly propagating luminous beams. Sharply defined edges and uniform luminosity give them an appearance of solidity.

But they are not really solid:— At Trancas¹⁰² one of the women involved put part of her right forearm into such a beam. She felt a powerful sensation of heat, but her skin was not affected. The beam itself remained unaltered. Her arm didn't cast a shadow.

The same lack of shadow zone was observed in case 109:— A square beam entering a room through the window wasn't hampered by the window frame. The part of the beam inside the room had a very strong and strictly uniform luminosity which didn't illuminate the room itself. Nevertheless, a projection of the window frame was visible on the opposite wall.

It is important to realize that we must distinguish between the light emitted by the beam and the light emitting process or substance or whatever-it-is inside it.

A 'solid light' beam presumably is a sharply defined tubelike zone at every point of which light is produced. Compare with a TL. The length and shape of the zone can be controlled by the UFO.

In some cases the emitted light could very well be of the usual kind we are accustomed to, but in other instances it is definitely of a different character (109, 114 — see next paragraph).

If the above is true, the lack of shadow zones would be explained if obstacles are washed or even

penetrated by the light emitting process. There is evidence that the latter is true: At Trances the beam not only wasn't hampered by Senora Yolie Moreno's arm, but it actually penetrated the fence of the farm and another one, aimed at the house, almost certainly penetrated the walls. Inside the house it became entirely lit up and the temperature rose by 24°C.

How the light is produced and how the production mechanism can be kept confined to such a well defined zone remains unexplained. The more so since we are not yet finished:— In case 103 a tube of 'solid light' proceeding from a mini-UFO slowly approached a transistor radio (which emitted high-pitched beeps while the UFO was close) and upon touching it caused it to wobble. This happened twice. Evidently the beam exerted a small force on the radio.

In case 117 a man was paralyzed by a red 'solid light' beam (he says: "Here it [the light] was and suddenly it ended. It was not like the beams from spotlights which you don't know where they end") and drawn towards the object emitting it.

Compare this with 111, 112 where there is additional evidence of light beams exerting a force. Whether these beams were of the 'solid light' type or not is, unfortunately, not clear.

A less direct interaction with the environment was noted in case 109. Here the beam affected the operation of the electrical pump of the central heating system.

Let's now take a look at the phenomenology of these tubes of 'solid light'. Typically the phenomenon first reveals itself as a relatively small protuberance from the main object coming out of no special opening as if straight through the wall (which could well be true in view of the facts just mentioned). This sometimes leads the observer to think the object is changing its shape (101, 103 — see part III, 6 of this article).

The ectoplasmic protuberance slowly and silently grows, taking the shape of a mathematically perfect hollow or solid cylinder or truncated cone. If cone-shaped,

the beam either diverges or converges. The reader shouldn't interpret these characteristics too literally. At Ellezelles (106), beams started out by diverging to about 1 metre above the ground, and from there converged to a point on the ground.

In case 109 the beam had a rectangular cross-section and in cases 107 and 117 the beams were projected downward through an opening in the bottom of the craft.

The unorthodox character of the beam is almost always immediately evident to the witness, either because it abruptly ends in mid air, or because of its slow propagation speed, or both. But even if the beam is observed when static and terminating on the ground its sharply defined edges and uniform luminosity give it a very special appearance. In 114 the witness stated: "My first impression was that the machine stood on the ground by means of legs or pillars. Then I realized that they weren't legs but light beams" (Compare with case 119). In this case, as in 109, the beams didn't illuminate their surroundings (see next paragraph).

The eventual length reached by a beam varies greatly, but can be considerable. In 101 and 102 a distance of 2200m and 3200m was covered at a speed of 13–26 km/h and 13–19 km/h.

In cases 106 and 109 the beams were fairly long too, and, at least at Ellezelles, they seem to have propagated faster than at Villiers-en-Morvan and Trancas, but there are insufficient data to compute the speed.

Anyway, a wide range of lengths and speeds is possible.

Diameters also vary: from 5cm in case 103 to 3m in case 102.

Most interesting is the fact that a 'solid light' beam can follow a highly curved path (105, 106). The reader should keep in mind that the beam very probably emits light at every point lying within its confines, so that it doesn't necessarily have to follow a straight line as opposed to a light beam produced by a central light source. Evidently UFOs are able to channelize the light emitting process along a curve, somewhat analogous to the curved TLs used

in skysigns.

In 103 a partial withdrawal of the beam was observed after which it proceeded in a different direction (to the tape recorder this time). Although it is not explicitly stated, this must have resulted in a beam with a kink in it.

Colour and intensity of the beams, again, vary greatly. White and bluish predominate and the luminosity can be dazzling. The light, sometimes noted to be non-illuminating, is often described as having a cold, non-radiating quality. At Serdon (115) everything illuminated by the beam acquired a bizarre range of colours. Yellow and green maize plants turned blue, and the hand of one of the witnesses turned lemon-yellow, while she felt a slight tickling in it.

Having finished their task (whatever that may be — see below), the beams disappear. A slow withdrawal — the reverse of the production process — is most often seen, but not always. Oscar A. Galindez (102) cites a case, where the beams suddenly disappeared as if switched off, and in Traunstein (105) the orange-yellow 'feelers' developed green tips and thereupon disintegrated in a green mist.

At Imjärvi (107), in the words of one of the witnesses: "The circle above the snow suddenly decreased, the light beam floated upwards like a trembling flame and went into the tube of the object." This has led me to classify 107 as a 'solid light' case. Curious details:— In the case in reference 114 the object became wrapped in a luminous haze at the moment it withdrew the light beams it was emitting ("like a bird folding its wings"), as if the light-emitting process concentrated in the beams became dispersed around the object. Something analogous was observed at Goux (108). Here the UFO had a clear-cut outline while emitting two 'red bars' obliquely downward, but when seen without them, it had vague contours and was surrounded by a kind of halo. The main object at Trancas developed a dense haze before aiming a beam at the house, but here the haze didn't

disappear while the beam was produced.

Now, what purpose do these beams serve?

In many cases they are evidently used as an aid to observation (101, 102, 103, 109, 115, 116). Other cases are less readily explained. The situation at Traunstein, for instance, is quite complicated and entirely beyond our understanding. It is aptly described by Ernst Berger (105): "Whatever it was, Traunstein object number seven carried out one of the most complex but apparently senseless missions I had ever heard of (...)."

The same applies to the Taizé and Ellezelles cases.

At Trancas a horizontal beam connecting two UFOs was seen. Humanoid figures moved to and fro between them and according to Senora Yolie they were inside the tube, apparently using it as a subway.

At Imjarvi a small humanoid appeared on the ground in the light beam. Its actual descent from the UFO was not observed by the witnesses, so it isn't clear whether the complicated behaviour of the beam had anything to do with it.

In 113 humanoids used what seem to be 'solid light' beams to leave and enter their craft. The other cases of this type are quoted by Oscar A. Galindez and Gordon Creighton in 102.

In the beginning of this paragraph it was noted that 'solid light' sometimes exerts a force on objects in its path. The behaviour of the humanoids in the three cases just mentioned tends to confirm this and shows its practical application.

Sebastian Acevedo (117) was paralyzed by 'solid light' and this brings us to another mode of application: in many cases humanoids have used paralyzing beams as a more or less harmless weapon. Although there is no evidence — as far as I am aware of — that this is 'solid light', it could very well be.

Additional references together with interesting discussions can be found at the end of 102 and 105. See 110 for a photograph of a UFO emitting what presumably are four beams of 'solid light'.

2. Emission of non-reflecting light

Witnesses invariably qualify this type of light in the same terms:

"It was a brilliant object, but it didn't illuminate its surroundings as for example the headlight of a car does." (207)

"I noticed the curious fact that this object didn't illuminate. The ground wasn't visible." (203)

In both cases the light was very strong, the objects were close to the ground (0m and 1.5m respectively), the witnesses were close to the object (23m and less than 9m respectively) and they were not blinded. Interestingly, it is sometimes explicitly stated by the witness that he wasn't blinded although the light was very strong (203, 204, 208).

How is it possible that such a vivid light doesn't illuminate its surroundings? The answer is simple: it isn't possible. This is an unknown type of radiation, perceived by us as light. It is apparently much less reflected by common objects than normal light is. It doesn't illuminate. Only direct rays reach the observer. It is somewhat disconcerting to realize that at night such an object would be (almost) invisible when looked at in a mirror. Apart from not being reflected, this radiation very much resembles normal light. It penetrates glass, we see it and it can be photographed (207).

A very strange effect was noted in case 201 (see also the previous paragraph): a 'solid light' beam emitting non-reflecting light entered a room through the window and projected the window frame on the opposite wall, while maintaining strictly uniform luminosity itself.

The UFOs emitting this kind of light are non-standard models. Intelligent spheres at Aveyron, a translucent sphere with moving spots in it at Uzes, a cask with two 'feelers' at Malataverne, etc.

But what does non-standard mean in this context?

The number of UFO shapes observed is so great as to make Detroit look green with envy. A UFO observed at close quarters always seems to have something special, different from all other UFOs and this could in itself

be a significant fact (see part III, 6).

Non-reflecting light is not easily recognized as such. The witness must be close to the light, the light must be bright, it must be reaching objects it can illuminate and it must be dark.

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'Solid Light' Cases:

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102. Oscar A. Galíndez, "Trancas, after seven years," *FSR*, Vol. 17, No. 3 (Also published in LDLN, No. 121).
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104. J. Tyrode, "Taizé: A case right out of the ordinary," *FSR*, Vol. 19, No. 4 (originally published in LDLN, No. 122).
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106. Observation at Ellezelles, Belgium: *Infospace*, No. 6, 1972; *FSR Case Histories*, No. 16, p. 2; *Skylook*, No. 91, cover.
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108. J. Tyrode, "Quasi atterrissage près de Goux (Doubs)," LDLN, No. 118.
109. M. Monnerie, "Un nouveau cas de 'lumière solide'," LDLN, No. 131.
110. Jean Bedet, "La Veillée Nationale d'observation à Barjols (Var)," LDLN, No. 138. (On the cover of this issue of LDLN a very nice colour photograph of the UFO in question can be seen. Four green beams of what presumably is 'solid light' extend downwards from the craft. The beams were also seen pointing upward.) Same photograph (but in black and white) on cover of *Skylook*, No. 87.
111. Case 311, in (10).
112. Antonio Giudici, "The case of Bruno Facchini," *FSR*, Vol. 20, No. 6.
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115. "L'ovni grand comme une maison," in (9), pp. 69-72.
116. "La voiture espionné du ciel," in (9), pp. 24-27. Also *Phénomènes Spatiaux*, No. 15.
117. "UFO reportedly breaks electric line," *Skylook*, No. 98.
118. "Pleins feux sur le Var," LDLN, No. 119 (observation at Toulon, p. 15).
119. Stan Gordon, "Possible physical evidence in Pennsylvania," *Skylook*, No. 84.
120. Ernst Berger, "The 'snails' are still around (I)," *FSR*, Vol. 21, No. 5. See also *Skylook*, No. 89, p. 16.
121. Graindorge, "En Polynésie," LDLN, No. 154.

Non-reflecting Light Cases:

201. See (109).
202. See (114).
203. "Malataverne — Une forme d'objet 'classique'," in (5), pp. 99-106.
204. J. Tyrode, "Atterrissage à Evillers," LDLN, No. 104.
205. F. Lagarde, "The Aveyron enquiry," *FSR*, Vol. 16, Nos. 5 and 6, Vol. 17, No. 1 (originally published in LDLN, Nos. 107, 108 and 109. Also in (5), pp. 146-184).
See also: F. Lagarde, "Retour des boules en Aveyron au même emplacement," LDLN, No. 135.
206. Gérard Nicoulaud, "Enquête dans l'Allier," LDLN, No. 137. This is a probable 'solid light' case also.
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TELL YOUR FRIENDS ABOUT FLYING SAUCER REVIEW

CLOSE ENCOUNTER OF THE THIRD KIND IN ITALY

Near landing at Santa Maria del Tempio in 1974

Renzo Cabassi

This contribution is the report, taken from a taped interview with the witnesses, of an event claimed to have taken place at a small village near Casale Monferrato (Piedmont), Italy. Our contributor conducted the investigation for the Comitato Nazionale Indipendente per lo Studio dei Fenomeni Aerei Anomali (CNIFAA) of Via Rizzoli 4 sc.B, 40125 Bologna, Italy, on April 20, 1974. Prepared by Charles Bowen from a translation by Francisco Izzo of CNIFAA.

ON THE NIGHT of April 15/16, 1974, Carla and Mauro Bellingeri, husband and wife, each aged 26, were driving home after a happy evening spent in the nearby village Cascina dei Rossi where there had been a festival in homage to the local patron saint. It had been a very pleasant evening in every sense; folk had eaten, drunk (normally) and danced.

It was 0.50 hrs (local time) and therefore April 16 when, about 400 metres from his home in the village of Santa Maria del Tempio (strada Frassineto 15/A) Mauro Bellingeri checked his watch; it had been only three or four minutes since they left Cascina dei Rossi and, in a minute or so, should reach their house.

The Bellingeris were talking of this and that when Mauro's attention was drawn to a bright object moving through the sky to the left. "Look at that!" he said to Carla.

The 'thing' was high in the sky and possessed of such an unusual motion that it forced itself upon their attention, so much so that Mauro found it difficult to concentrate on the road in front of him, especially when the object lost height in a rapid dive, seemingly vertically, to stop, without wavering, some 12-13 metres directly above their house.

Mauro ran the car straight into the entrance gate and drew up in the little square in front of their house. He got out to open up the garage door, while Carla remained seated in the car. Mauro next returned to the car and Carla got out to join him; together they watched the strange object, Carla standing at the right and her husband to the left, respectively, of the car. As will be seen from the report they make after the event, their attention was entirely concentrated on that very prominent part of the object which they described as the 'cockpit,' a feature that was bright, but not particularly so.

The object hung motionless in the air as they stared at it: at approximately 12-13 metres above the ground, soundless, and in level trim. It consisted of two clearcut portions: the first a sort of dome (the Bellingeris' 'cockpit'), bright inside and completely transparent, roughly hemispherical in shape (see Fig. 1); the second, a diametrical disc-

shaped ring surrounding the 'cockpit' at its base. The ring did not seem to be in one part with the 'cockpit.' Indeed it appeared detached from it, and carried lights like 'electric bulbs' of red, yellow and green which rotated clockwise and slowly in a horizontal plane (one circuit, it seems, in every 20 seconds). The coloured lights were arranged in alternate groupings, red-yellow-green-red-yellow-green, and so on, and Mauro, who has a good knowledge of electrical lighting, describes them as being anomalous, but he cannot specify if they were either part of the ring, or sources of light on which the ring (by way of a screen) was sliding. To him those lights recalled, both in power and effect, the strobe lights of police vehicles, giving the illusion of intermittence while in reality they revolve.

Under the ring Carla said she could see two 'protuberances' just beneath the 'cockpit,' but Mauro could neither confirm nor deny this.

The UFO reflected the light of some flood-lamps switched on at night in the nearby Torno building yard, which faces Bellingeri's house. On that holiday evening such illumination was more powerful than on other evenings, and it lit up the Bellingeri house too. Indeed it was Carla's personal view that this illumination could have attracted the object.

Occupants?

The Bellingeris stated that they could see three seemingly human shapes (they called them 'people' in the 'cockpit') arranged in a horizontal row in what was assumed to be the front of the dome. A lightly shaded zone surrounded the three darker silhouettes which seemed to make slight movements. The outermost [*not clear what is meant by that - C.B.*] silhouette, which seemed similar to the other two, was nearest to the witnesses. Accordingly it was very useful for a general description of the morphology of all three entities.

The entities appeared to have big greyish round helmets, completely opaque and, near the base (that is, at the point where one would expect the head to end, and the shoulders to begin) and corresponding with the presumed front of the head, there was