

# Radio and Microwave : on the Trials by Guglielmo Marconi in Villa Mondragone

*Sala degli Svizzeri, Villa Mondragone, 09 June 2025 - 11:50 - 12:15*

**Gaspare Galati**, honorary professor,

**Department of Electronic Engineering, Tor Vergata University, Roma, Italy**

and

**CNIT - National Inter-University Consortium for Telecommunications**

[gaspare.galati@uniroma2.it](mailto:gaspare.galati@uniroma2.it)

**Starting point : Storia delle telecomunicazioni (2011)**

Edited by: V. Cantoni, G. Falciasecca, G. Pelosi -



Followed by two books on the history of radar ( 2012 and 2016)

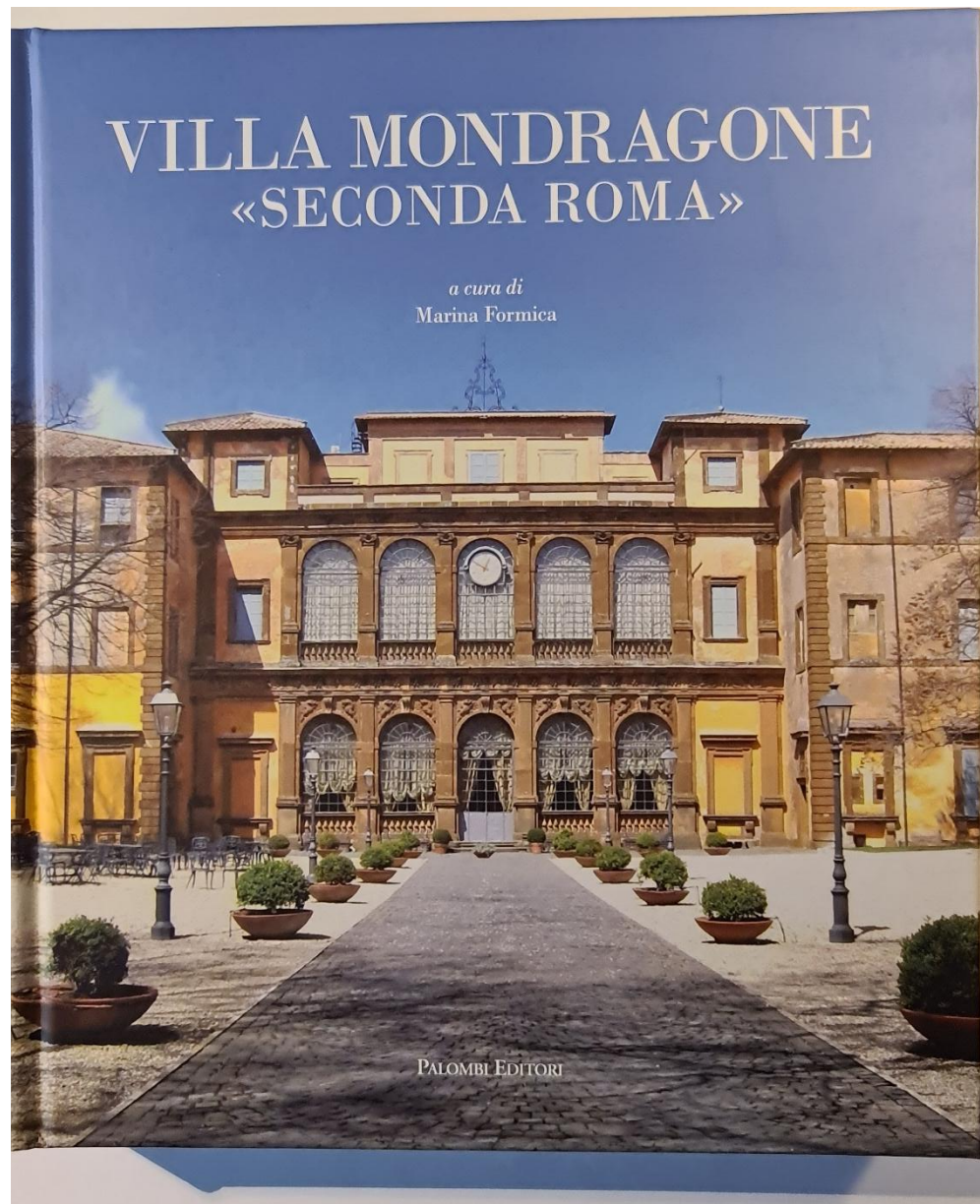


# Radio and Microwave : on the Trials by Guglielmo Marconi in Villa Mondragone

## Content

- About Villa Mondragone (30%)
- About “Ultra-short wave” trials by Guglielmo Marconi (50%) - Why ?
- Comments and Conclusion (20%)

## Book «Villa Mondragone – Seconda Roma», 2015



Palombi  
Editore, 2015

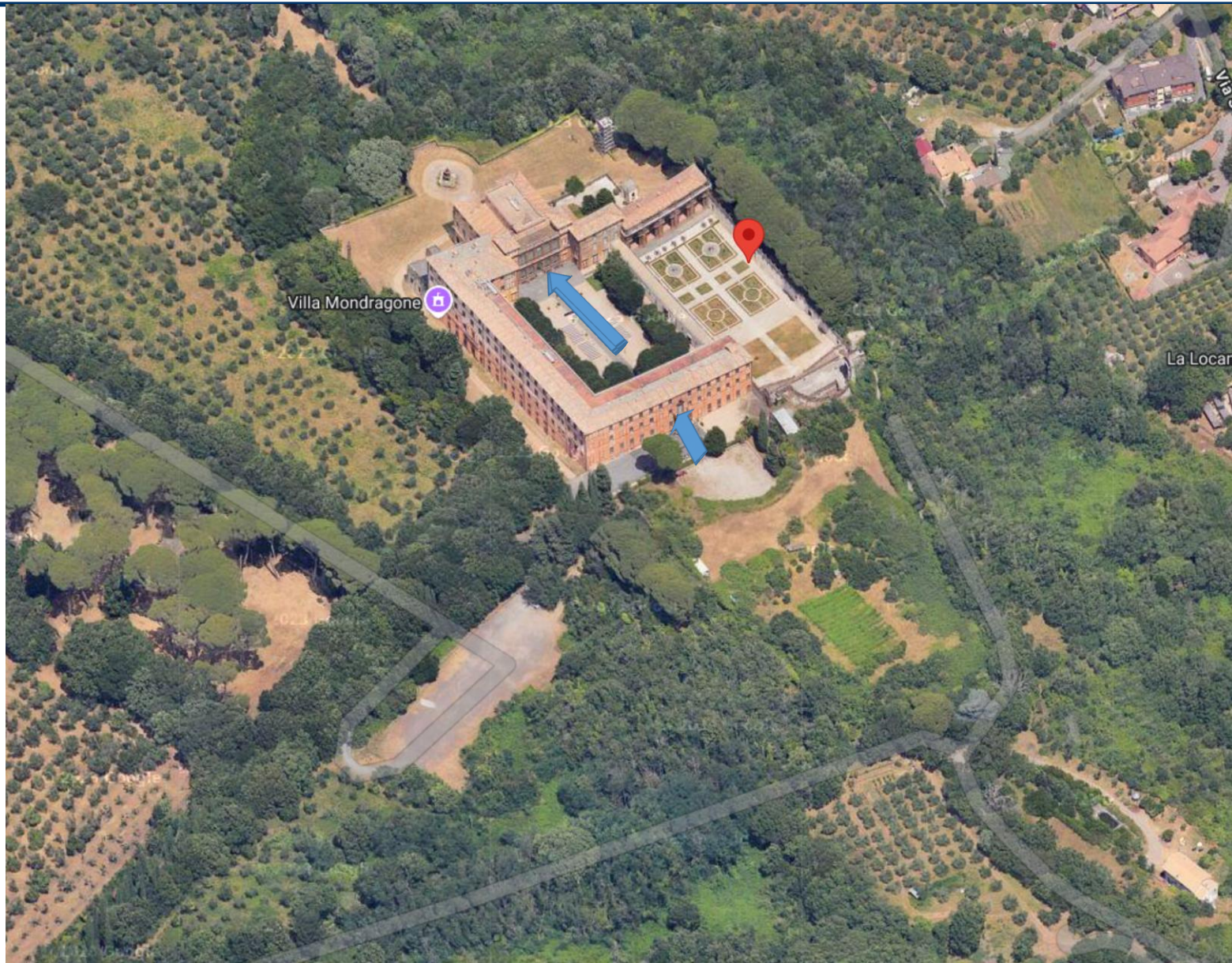
*Over 300 pages  
and 20 chapters  
covering various  
aspects*

- *Historical*
- *Architectural*
- *Environmental*
- *Botanical*
- *Zoological*



Fig. 1. Fronte e retro di una cartolina postale affrancata, emessa per la ricorrenza del 26/04/1995

- Built in XVI Century (Card. Sittico Altemps)
- Acquisited in 1865 by the «Compagnia di Gesù» as «Nobile Collegio dei Gesuiti»
- From 1981, part of Tor Vergata University
- The name : from the «**Winged Drake**» in the Heraldic Bearings of the family Buoncompagni, the one of Pope Gregory the 13° (Gregorio XIII)



## Villa Mondragone – la culla del calendario gregoriano



### Historical event :

*on 24th of February,  
1582 , Pope Gregory  
signed the decree  
establishing a new  
Calendar, now called  
Gregorian, to  
substitute the Julian  
Calendar  
for the Worldwide  
Catholic community*



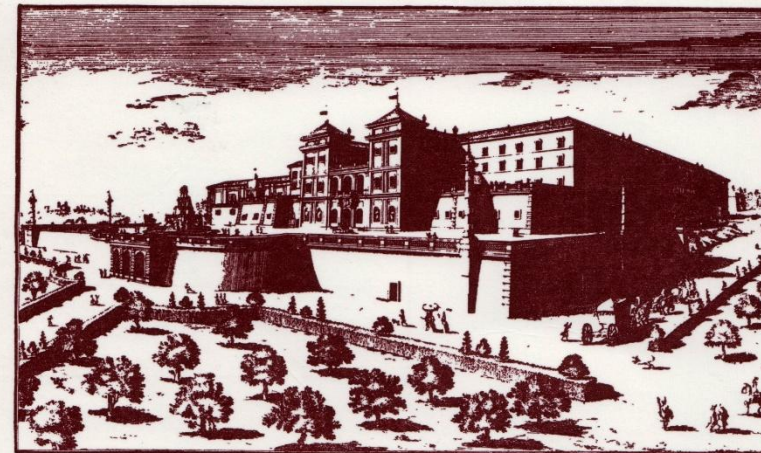
**Special Postage Stamp Cancellation by Poste Italiane (Italian Mail) on 26 April 1995 for the Centenary of Radio (Marconi, 1895), remembering the first radio link between Villa Mondragone and the Vatican**

**RADIO, RADAR, MICROONDE: GLI ESPERIMENTI DI GUGLIELMO MARCONI NELLA VILLA**  
*Gaspare Galati*

Villa Mondragone è ben nota agli studiosi, ed in particolare agli storici, come residenza estiva di papa Gregorio XIII (Ugo Boncompagni) da cui il pontefice emanò la bolla *Inter gravissimas pastoralis officii nostri curas* (24 febbraio 1582), che riformava il calendario giuliano. Non è così universalmente noto il fatto che la Villa sia stata sede di esperimenti scientifici, prima e dopo la vendita da parte dei Gesuiti (avvenuta nel 1981, dopo ventotto anni di abbandono) all'Università degli Studi di Roma "Tor Vergata", presso la quale è ben viva la memoria della realizzazione di una versione controllata elettronicamente del pendolo di Foucault, qui installato il 27 aprile 2011<sup>1</sup>.

Non molti anni prima, nel 1995, come opportunamente ricordato dal prof. Rodolfo Strollo<sup>2</sup>, le Poste Italiane hanno emesso uno speciale annullo per il 26 aprile 1995, Giornata celebrativa di Guglielmo Marconi<sup>3</sup>, svoltasi a Villa Mondragone nell'ambito del *Centenario della radio*. Nell'annullo postale, oltre al profilo di Marconi e dell'antenna da lui realizzata, spicca il logo dell'Università (fig. 1).

Nell'Appendice – presa da una raccolta di scritti marconiani edita nel 1974 – del lavoro di Rodolfo Strollo, si ricorda che Guglielmo Marconi sperimentò nell'aprile del 1932 il primo radiocollegamento a microonde, precisamente tra il Vaticano e Villa Mondragone. Infatti, dal 1931 Marconi, confermando il proprio notevole intuito, cominciò ad interessarsi alle lunghezze d'onda inferiori al metro,



**VILLA MONDRAGONE**  
*Sede di rappresentanza dell'Università di Roma "Tor Vergata"*

LA RADIO (1895-1995)  
microonde tra la Città del  
Vaticano e Villa Mondragone (aprile 1932)

Fig. 1. Fronte e retro di una cartolina postale affrancata, emessa per la ricorrenza del 26/04/1995

**First microwave link between the Vatican and Villa Mondragone (April, 1932)**

- At the beginning of 1930's , Pope Pius XI (Achille Ratti) asked for a radio telephone link – substituting the cables - between his summer residence (the Apostolic Building in Castel Gandolfo) and Vatican City (about 20 km).
  - G. Marconi organized radio link trials using a small experimental transmitter in Vatican City and a receiver in Villa Mondragone (416 m a.s.l.) , to be moved to Castel Gandolfo.
  - Trials were executed in April, 1932 with good results. Pope Pius XI took part to the trials.
- The signals were received at Villa Mondragone and, then, at Castel Gandolfo.
- The duplex radio telephony system become permanent from Vatican to Castel Gandolfo.



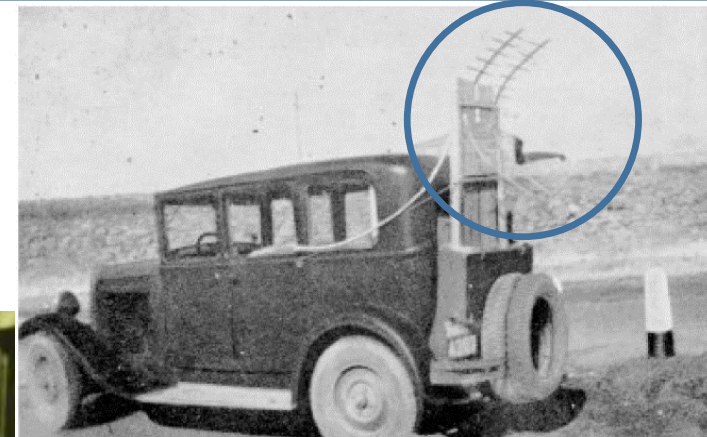
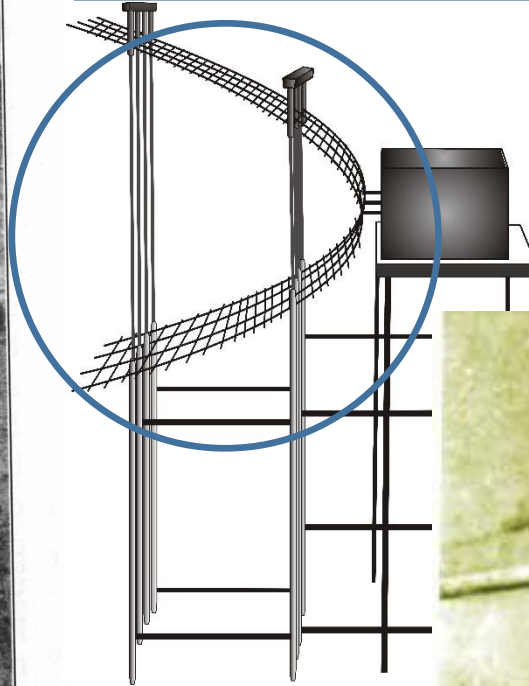
**Trials with Pope  
Pius XI and  
(wearing a hat)  
Guglielmo  
Marconi**



## “Ultra-short wave” trials by Guglielmo Marconi



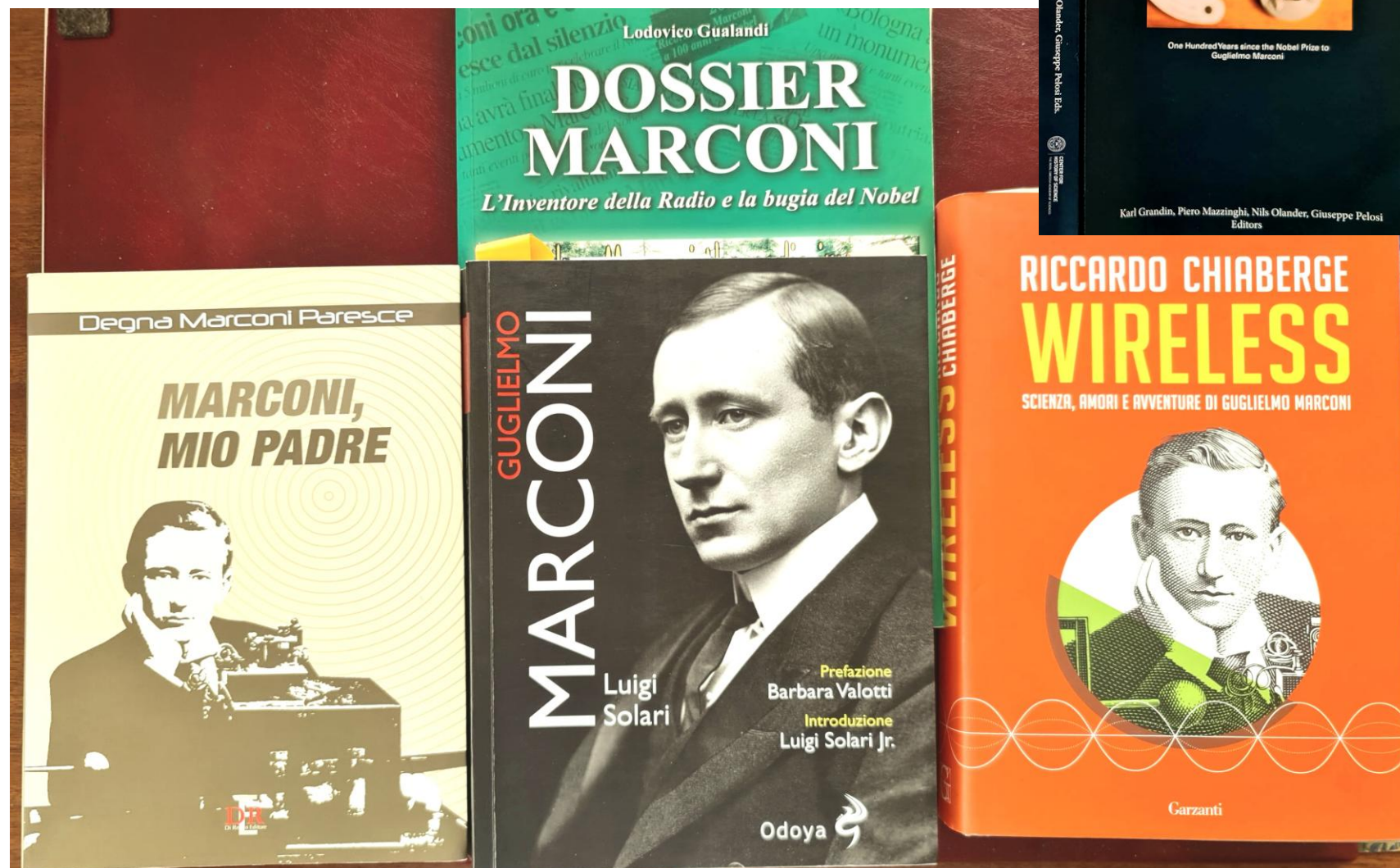
Città del Vaticano 1932 - Guglielmo Marconi illustra a Papa Pio XI la nuova stazione a onde ultracorte



# On the lack of more info (explaining 50%)

In the international literature, the number of scientific publications signed by Guglielmo Marconi is incredibly small as compared to the interest of the topics, to the length of the author's career and to the number of his patents (above thirty). However, it should be specified that there is *unofficial news of cases of documents still held by the heirs of Guglielmo Marconi.*

**Where are the log books with technical notes ?**

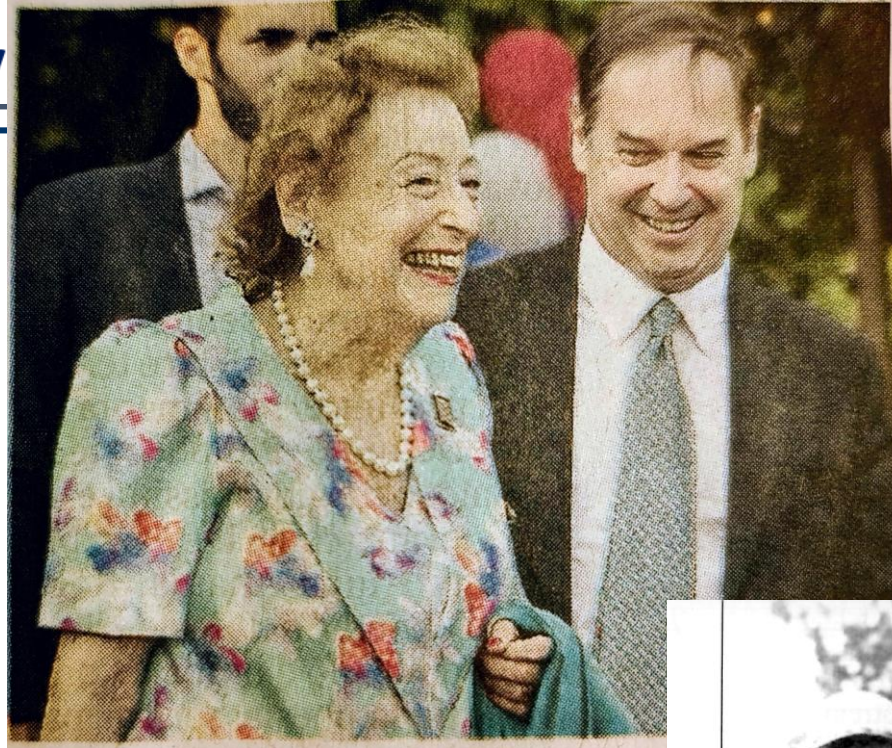


## Marconi's heirs, today

USA Independence day is July, 4th but this year in Italy it was celebrated on 26 June 2023 at the residence of the USA ambassador in Roma.

*In the photo : Marconi's daughter Elettra (born on July, 20th 1930 in Civitavecchia) and his son Guglielmo Giovannelli Marconi.*

Maybe she saves in her house (Via Condotti, 11- Roma)  
Marconian documents of interest for the history of technology?



Accanto, il principe Guglielmo Giovannelli con la madre Elettra Marconi al ricevimento per l'Independence Day a Villa Taverna



Guglielmo Marconi con la moglie, Maria Cristina Bezzi Scali, e un'amica (a destra). Sulle ginocchia di Marconi c'è la piccola Elettra

# HISTELCON 2023

IEEE  
Region 8



IEEE  
Italy Section

## G. Galati “Guglielmo Marconi and the Origin of Radar: Needed Clarifications”



### HISTELCON 2023

Florence, Italy - 7-9 September 2023

**SCIENCE AND TECHNOLOGY OR TECHNOLOGY AND SCIENCE?**

# Science, Technology, **Criticism!**

# Guglielmo Marconi and the Origin of Radar: Needed Clarifications

Gaspare Galati, honorary professor  
Department of Electronic Engineering  
Tor Vergata University and  
CNIT National Inter-University Consortium for Telecommunications  
Roma, Italy  
[gaspare.galati@uniroma2.it](mailto:gaspare.galati@uniroma2.it)  
ORCID: 0000-0003-1805-4640

***Abstract*—The origin of radar and the contribution by many nations have been thoroughly analyzed in various conferences, papers and books (a vast bibliography is available in pages 385-395 of [1]). An alleged role by Guglielmo Marconi in this context has been presented in different instances, even recently. This contribution to the 2023 IEEE 8th History of Electrotechnology Conference is aimed to clarify such a point and to stop the propagation of errors, using **the razor by Wilhelm von Ockham (1287-1347)**.**

Guglielmo Marconi (Bologna, 25 April 1874 – Roma, 20 July 1937) – is considered, especially in the Italian literature, “the father of wireless” or “of radio”(\*). He joined the the National Fascist Party in June 1923, some months after the fascism went in power, see the (**not easy to find** : from “Il Comune di Bologna, July 1937) photo with Bottai and Ciano.



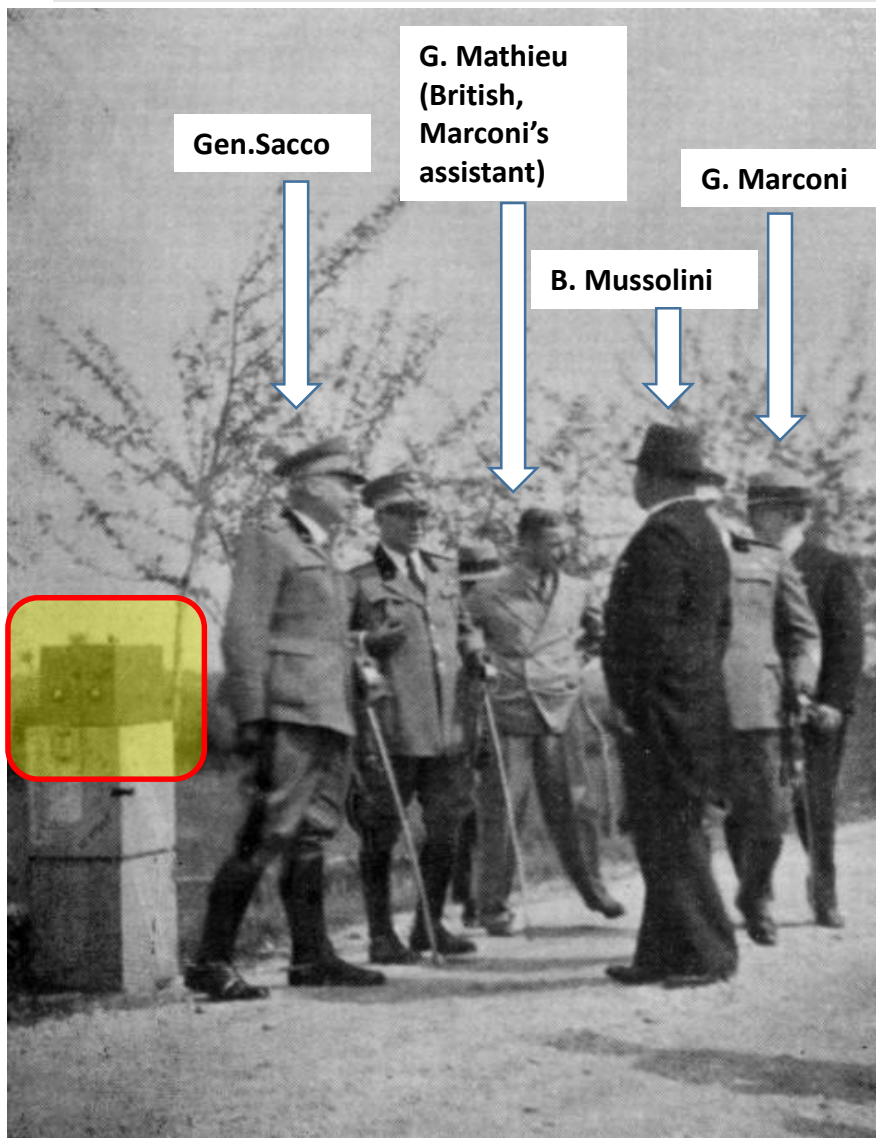
**In 1930, Benito Mussolini appointed him President of the Royal Academy of Italy, which made Marconi a member of the Fascist “Gran Consiglio”.**

(\*)

- Russia, Alexander S. Popov
- United Kingdom : O. Lodge & G. Minchin
- Other : Jagadish Chandra Bose
- USA : priority by Supreme Court (1943) to the patent by Nikola Tesla over Marconi.

# THE ALLEGED “RADAR” EXPERIMENTS BY GUGLIELMO MARCONI - 1

Experiments near Roma (site of Acquafredda) on May 14th, 1935



LUIGI CARILIO CASTIONI  
37100 VERONA  
Via Cesare Betteloni, 8

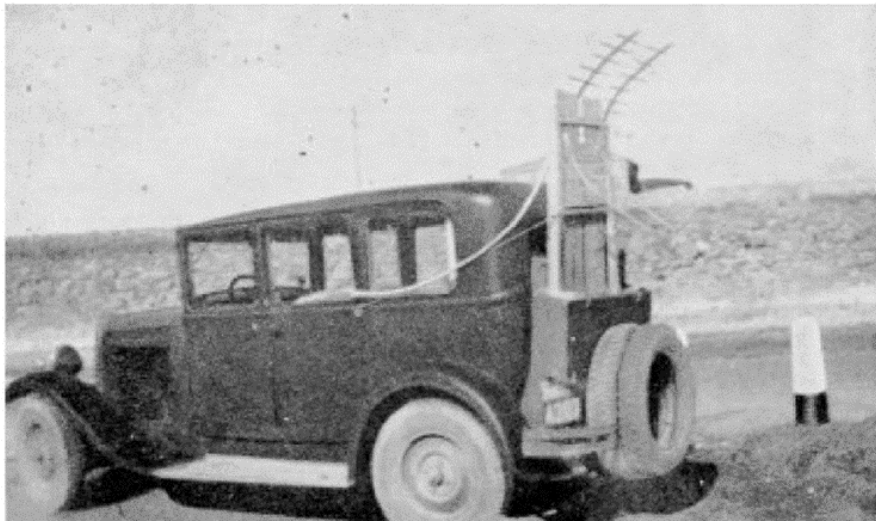
14 maggio 1935  
loc. Acquafredda vicino Roma  
Esperimenti di radiocalizzazione  
con Guglielmo Marconi e F. A. A.

Guglielmo Marconi, il 1° da destra  
gen Luigi Sacco, il 1° da sinistra  
gen Giuseppe Guasco, dirett Super  
del Serv. Tecn Genio, il 2° da sin  
gen Arturo Giuliano, Ispett. Genio  
coperto dal Capo del Governo  
il Capo del Governo, in 1° piano  
al centro l'ing. Mathieu, inglese, segue  
Fazio di G. Marconi

ricevuto 23. 7. 74

# THE ALLEGED “RADAR” EXPERIMENTS BY GUGLIELMO MARCONI -2

Torre Chiaruccia : in January 1935 Marconi ordered a 50 cm wavelength transmitter and a receiver to the Officine Marconi of Genoa, and that with them some experiments were conducted by him together with the his assistant Solari on April 1935 in Santa Marinella. Solari and Marconi operated at the receiver and transmitter, keeping the projector aimed at the car of admiral Bottini.



**The car by Adm. Bottini (Courtesy: prof. S. Selleri)**



## Final Conclusion (1/2)

*This above all: to thine own self be true,  
And it must follow, as the night the day,  
Thou canst not then be false to any man.*

Many «celebrated persons» - let them be Scientists , Intreprenuers , Artists, Conductors and so on  
- show a *clear side* and a *dark side*. There is no lack of examples, including these Nobel prizes :

- Brian Josephson
- Werner Heisenberg
- Max Planck
- Luc Montaigner
- Fritz Haber
- Kary Bank Mullis
- P.E.A. Von Lenard
- Johannes Stark

(not to mention infamous directors like Herbert von Karayan and Italian actors such as Giorgio Albertazzi and Walter Chiari, and the Nobel Prize Dario Fo..).

## Final Conclusion (2/2)

Hence, it is not surprising that also Guglielmo Marconi got both sides, which does not prevent us to honor him as a great (and lucky) experimenter and a very successful business man.

*For interested people, the dark sides are*

- **Lack of scientific approach**
- **Fascism**
- **Foot in two shoes (Italy and United Kingdom)**

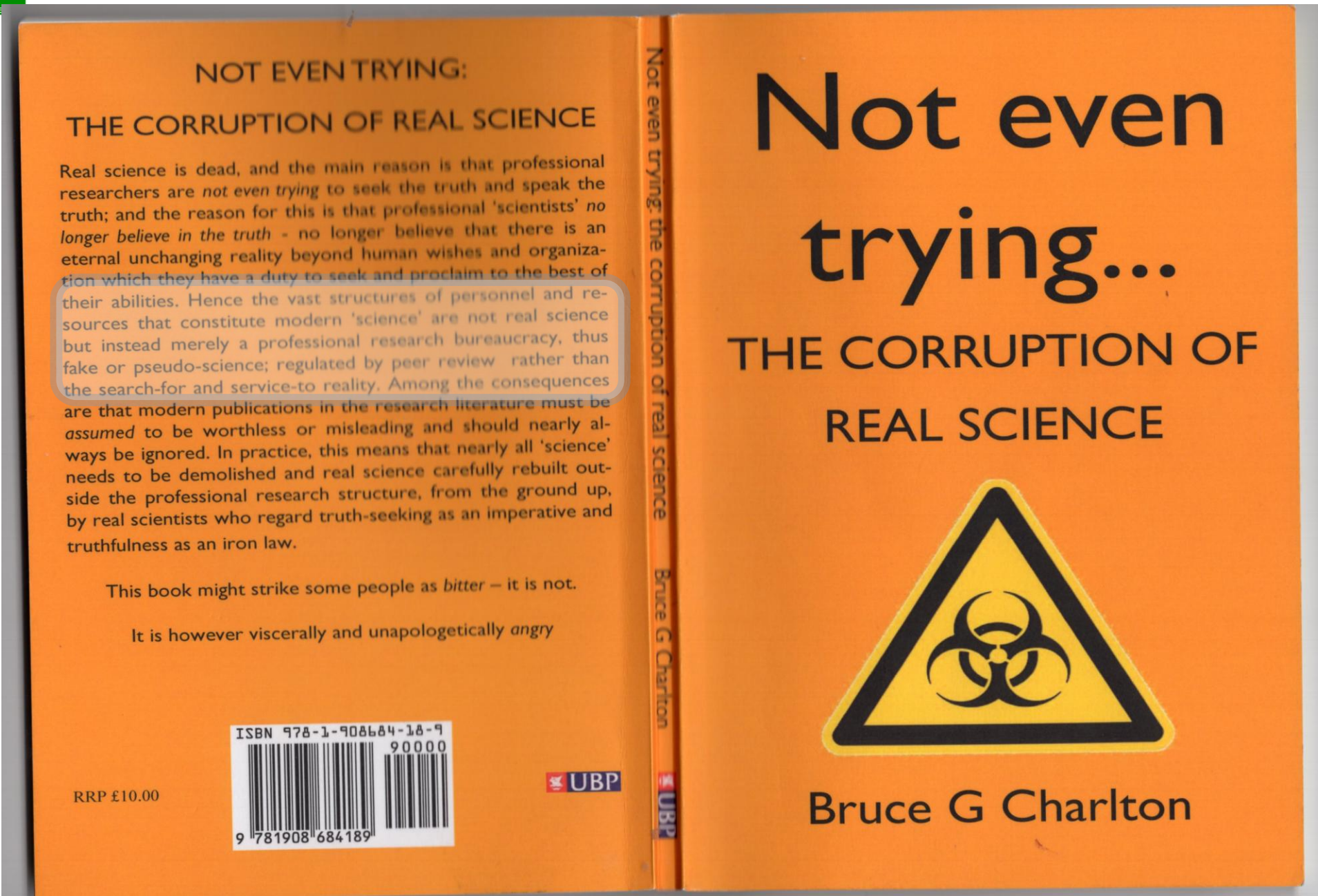


G. Mathieu  
(British,  
Marconi's  
assistant)



Marconi con George Stephen Kemp (a sinistra) e Percy Wright Paget (a destra), suoi fedeli assistenti. Marconi, forse influenzato dai baffuti assistenti, si fece crescere un paio di baffetti, mentre di solito era completamente rasato.

# Generalization to the worldwide researchers (including me)



## ***The “Qantum Radar Case***

1) “Range Limitations in Microwave Quantum Radar” by Galati, G. and Pavan, G. (2024):

<https://www.mdpi.com/2865432>

2) ‘On Target Detection by Quantum Radar (Preprint)’, arXiv: [quant-ph], 29 February 2024, [Online]:

<https://doi.org/10.48550/arXiv.2403.00047>.

3) [Lessons Learnt from the Rise and Fall of Quantum Radar Research](#) by G.Pavan, G. Galati and F. Daum, Academia Quantum, March 2025.

# The End

Proposal to the EPS :  
One – day workshop in  
Fall, 2025 at Tor Vergata  
on The corruption of  
modern science :

- The case study of  
Quantum Radar after  
the preliminary Cold  
Fusion /LENR
- Hype on Quantum  
Computation
- Proposals and debate

*Thank you*

*for your  
attention...*