

# notes on the web

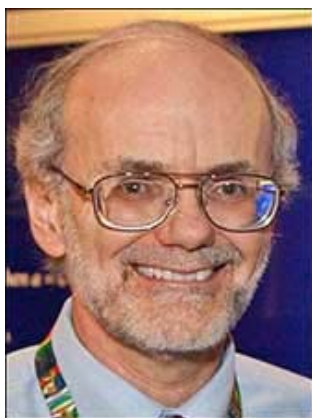
Dr. Everett G. Farr, Chief Editor



Carl E. Baum was born in Binghamton, New York, on February 6, 1940. He received the B.S. (with honor), M.S., and Ph.D. degrees in electrical engineering from the California Institute of Technology, Pasadena, in 1962, 1963, and 1969. He received the degree of Doktoringenieurs Ehren halber (Dr.-Ing. E.h.) (Doctor of Engineering honoris causa) from the Otto-von-Guericke-University Magdeburg, Germany, in 2004.

He was stationed at the Air Force Research Laboratory, Directed Energy Directorate (formerly Phillips Laboratory, formerly Air Force Weapons Laboratory), Kirtland AFB, Albuquerque, NM, from 1963 to 1967 and from 1968 to 1971. From 1971-2005 he had served as a

## Events & Announcements



Dear HPEM Community,

From the staff here at the Summa Foundation Notes, we wish you all a wonderful holiday season.

We have just published three notes to help keep you sharp during your time off. We hope you enjoy them!

I'd like to thank our reviewers, who are critical for the smooth operation of this publication.

I also invite you to start submitting abstracts for the Bangalore ASIAEM Conference, to be held July 23-27, 2017. Abstracts are due February 22, 2017.

Here are three new Notes that we have just uploaded for the Holiday Season. Enjoy!

[IN 628 Effects of Distributed Sources on Transmission-Line Models: Low Frequency Approximations. J-P Parmantier, I. Junqua, S. Bertuol and P. Schickele, June 2016.](#)

[PhN 22 The Electron and the Hlectron, I.L. Gallon, DV Giri and CE Baum \(Posthumously\), December 2016](#)

[SDAN 47 EMP-Hardened Photovoltaic Generators: A Possible Emergency Power Solution for Critical](#)



We would like to acknowledge the assistance of William D. Prather and Judy Johnston of the Air Force Research Laboratory, Directed Energy Directorate, for their assistance in assembling this collection.



We also would like to thank the Department of Electrical and Computer Engineering at the University of New Mexico for providing the resources that have enabled us to place these notes on the World Wide Web.

<http://ece-research.unm.edu/summa/notes/index.html>

civil servant with a position as Senior Scientist at the Air Force Research Laboratory. Since 2005 he has been a distinguished research professor at the University of New Mexico, Department of Electrical and Computer Engineering.

He has been awarded the Air Force Research and Development Award (1970), the AFSC Harold Brown Award (1990), and Air Force Research Laboratory Fellow (1996). He is editor of several interagency note series on EMP (electromagnetic pulse) and related subjects and has received (1984) the Richard R. Stoddart award of the IEEE EMC Society and (2006) the John Kraus Antenna Award of the IEEE Antennas and Propagation Society.

He is a Life Fellow of the IEEE, and is recipient of the 1987 Harry Diamond Memorial Award, one of the IEEE Field Awards, with citation "for outstanding contributions to the knowledge of transient phenomena in electromagnetics," and is recipient of the 2007 IEEE Electromagnetics Field Award with citation, "for contributions to fundamental principles and techniques in electromagnetics."

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(Kelvin Lee):: ***"Carl built many, many simulators. First one called ALECS, then ARIES and then ATLAS. I think he named all these after Greek God's names. They always start with A which***

[Infrastructure? Markus Nyffeler and Armin W. Kaelin, November 2016](#)

Best Wishes,  
Everett Farr  
Editor, Summa Foundation Notes



[The ASIAEM2017 symposium will be held in Bengaluru, India. Please click here to download the brochure!](#)

[EUROEM 2016 took place July 11-14 at the Imperial College London, UK.](#)

[Download all the abstracts for EUROEM2016 by clicking here!](#)

(Caution, this is a 37 megabyte download)

[Click this sentence to view the EUROEM2016 Technical Program.](#)

[A Letter from The New Editor](#)

We are pleased to announce the Spring 2016 addition to the Notes Series:

[SSN 573 Risettime Evolution in HEMP \(High-Altitude Electromagnetic Pulse\) E1Waveforms - Technology and Standards, D. V. Giri, William D. Prather, 25 December 2015](#)

[SSN 574 Conformal Impulse Receive Antennas, D. V. Giri, M.D. Abdalla, M.C. Skipper, Y. Rahmat-Samii, 18 February 2016](#)

[SSN 575 Design of an Ultra-Wideband Ground-Penetrating Radar System Using Impluse Radiating Antennas, J.B. Rhebergen, A.P.M. Zwamborn and D.V. Giri, 21 February 2016](#)

[SSN 576 Design Aspects of a Dual Conical Lens between a High-Voltage Pulser and a Helical Antenna, D. V. Giri and Jerrold Levine, 15 April 2016](#)

[SSN 577 The Effect of Minor Radius on the Performance of a Helical Antenna, D. V. Giri, F. M. Tesche and Jerrold Levine, 15 April 2016](#)



Dr. Carl E. Baum has published five books: Transient Lens Synthesis; Differential Geometry in Electromagnetic Theory, Electromagnetic Symmetry, Ultra-Wideband, Short-Pulse Electromagnetics 3, Detection and Identification of Visually Obscured Targets, and Ultra-Wideband, Short-Pulse Electromagnetics 8. He is a member of Commissions A, B, & E of the U.S. National Committee of the International Union of Radio Science (URSI). He is founder and president of SUMMA Foundation which sponsors various electromagnetics related activities including scientific conferences, publications, short courses, fellowships, and awards. He has led EMP and HPE short courses at numerous locations around the globe.

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(Ira Kohlberg): ***"If you weren't called "Stupid" by Carl you were a nobody . . . It wasn't a put-down: Once he said that to you, you knew you were one of his friends . . . Carl's human qualities were just outstanding and he wouldn't let anybody down. He cared about people. He liked people and everybody was in his clique."***

(Larry West): ***"Carl was too brilliant to ignore. You might resent him. You might hate him***

*stands for Air Force . . . The Air Force wanted to send him to school to learn to be an administrator or a manager. He didn't want to do it and he didn't want to bother with it."*

(Robert Gardner): "*Carl's job was what Carl decided it was going to be. He never paid much attention to his managers. He just kind of did what he wanted to do. He had constant fights with the people, particularly over the Notes . . . I think he thought he was Mr. EMP. It's just a name I think that comes naturally. His notoriety, if you will, came out when TRESTLE was built. Certainly in the late 60s. It was such a massive structure.*"

(John Norgard): "*Carl mellowed towards the end --- he was more kinder in his comments to other people. But he, then again, he would not tolerate any error and he would correct people and his corrections were amazing! His depth was so good: He just knew so much about so many things and it amazed me.*"

(John H. Darrah): "*Carl was always busy solving problems! He'd give a lecture to anybody about any of these problems. Usually it would start with NO! NO! NO! You don't understand and then he'd go to the board and explain it to you. He was lecturing most of the time. He had a short receiver and a long transmitter. Because he was just brighter than everybody else. He was right. He was just plain right. You know? So when he said, no no no you don't understand, you know: I never saw him wrong on boundary value problems in electromagnetic theory. He was always right.*"

(Bill Prather): "*Carl was a practical person. All of his theories, his antennas, even the BLT, for example, were engineered toward applying*

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[Sensor & Simulation Notes 1-575 \(EMP-1\)](#)

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[Measurement Notes 1-65 \(EMP-4\)](#)

[System Design & Assessment Notes 1-47 \(EMP-5\)](#)

[Lightning Phenomenology Notes 1-24 \(EMP-6\)](#)

[Lightning Simulation Notes \(EMP-7\)](#)

[Switching Notes 1-35 \(PEP-1\)](#)

[Flyer Plate Notes 1-18 \(PEP-2\)](#)

[Radiation Production Notes 1-112 \(PEP 3\)](#)

[Circuit & Electromagnetic System Design 1-69 \(PEP-4\)](#)

[Dielectric Strength Notes 1-28 \(PEP 5\)](#)

[Energy Storage and Dissipation Notes 1-12 \(PEP 6\)](#)

[High Voltage Notes 1-5 \(PEP 7\)](#)

[Electromagnetic Launcher Notes \(PEP 8\)](#)

[Mathematics Notes 1-100 \(ACT-1\)](#)

[Probability & Statistics Notes 1-13 \(ACT-2\)](#)

[BAS Sensor Notes 1-5 \(BAS-1\)](#)

[BAS Instrumentation Notes 1-2 \(BAS-2\)](#)

[Physics Notes 1-22 \(Misc-1\)](#)

[Education Notes \(Misc-2\)](#)

[Bioelectric Notes 1-6 \(Misc-3\)](#)

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[Limerick Interaction: A Compleat Concatenation](#)

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[My Journey with Carl — A Memoir by D.V. Giri](#)

[History of the Nuclear EMP & High-Power EM](#)

[TRESTLE: Landmark of the Cold War \(A Movie!\)](#)

[Books of Abstracts from AMEREM and EUROEM](#)

[This is Where the AMEREM EUROEM Memos Live](#)

*but you couldn't ignore him. The Notes series was unique in that it was edited by the foremost electromagnetic scientist in the world: It was free and the Notes came out quickly . . . Pretty soon the Notes series were being referenced in other publications like IEEE, European publications and Asian publications. Researchers recognized the authenticity of the Notes series and its high degree of technical content and they just referenced it."*

(John H. Darrah): "*Carl was a nice guy. He had his oddities but he was a genius — quality guy. People like me who hire geniuses have to make sure that people leave them alone, right? Leave 'em alone! Yeah, he's an odd duck, but leave him alone! It's really important that you don't screw with him . . . It was terribly intimidating to people that couldn't just accept that this guy was brighter than you and he had a hard time talking to you because he knew so much more about this subject than you do. It's like taking a drink of water from a fire hose, you know: You can't swallow fast enough.*"

(John Norgard): "*Music was his other passion. Not only did he play the piano very well, he composed. Mostly classical music that I remember, I don't know if he composed anything else. But he composed this Symphony music, he had this quartet/quintet that he would write for, again I don't remember the details but he was very musical and that seems to go with mathematicians, I understand that music, being very theoretical also fits the mathematicians mind very well . . . You know, he must've worn his shirts for a long time before he changed them and....I think he was a great, brilliant scientist but he wasn't quite human at times it seems. I call him "machine to man". That's*



*them toward a practical problem, as opposed to a theoretical physicist who might come up with a theory that's not practical."*

(Kelvin Lee): *"Carl was a very good experimentalist. I would say he was first rate engineer. Hard to find engineers as good as Carl. He had a tremendous intuition and he always said, "Don't box yourself in!" He always wanted new ideas . . . He would get in fights with the Colonels and so they wanted to get rid of him but they couldn't get rid of him because he was very careful. He document everything. One time he said to me, Kelvin, I document all the conversation, everything because the people want to get rid of me."*

[Archive of Postcard Announcements](#)  
[Call for Notes: Hear Ye! Hear Ye!](#)

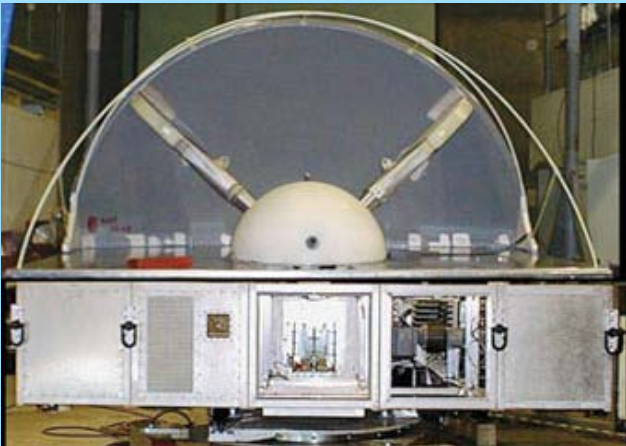
AMEREM 2014 was held from July 27 to Aug. 1, 2014 at the University of New Mexico in Albuquerque.

[The Final Program Book is available here!](#)  
[Download all the Abstracts by clicking here!](#)  
[\(Caution: This is a 40 megabyte download\)](#)



The YouTube video above is a collection of over 200 photographs that were taken during AMEREM 2014, set to the music of Dr. Carl E. Baum.

[If you would like to download an AVI video of the same thing, please click here but note: this is a 150 megabyte file. The resolution is considerably higher than the YouTube video, however. Also, your computer may need a plug-in to play this video properly.](#)



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Electrical and Computer Engineering Department at The University of New Mexico.

"All published Notes are approved for public release and their distribution is unlimited."

*how it was in my interaction with him. In the beginning he was just a research machine: All he did was research, he was so focused on that. You know, Carl might come in, the machine would come out an Interaction Note would come out of the process. But then later, as I got to work with him or interact with him more at conferences and out of the work environment I realized he was human after all. Like the football thing. Who would ever expect that he'd be a football player?"*