

## Professor Clint Sprott

Born in Memphis, Tennessee in 1942, Clint Sprott developed an interest in physics early in his childhood. He went on to earn a B.S. at the Massachusetts Institute of Technology in 1964 and a Ph.D. in physics at the University of Wisconsin in 1969. He spent 1970-1972 at the Oak Ridge National Laboratory in Tennessee. Then in 1973 he returned to the University of Wisconsin - Madison to become Professor of Physics. His research is in plasma physics and chaos, and he is currently working on complex nonlinear dynamical systems.

In an effort to share with the public his lifelong interest and enthusiasm for physics, Professor Sprott has presented "The Wonders of Physics" since 1984.



### Acknowledgements

Thanks to all who helped put this program together.  
A special thanks to the following:

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Akire Trestrail	Peter Weix	Michael Winokur
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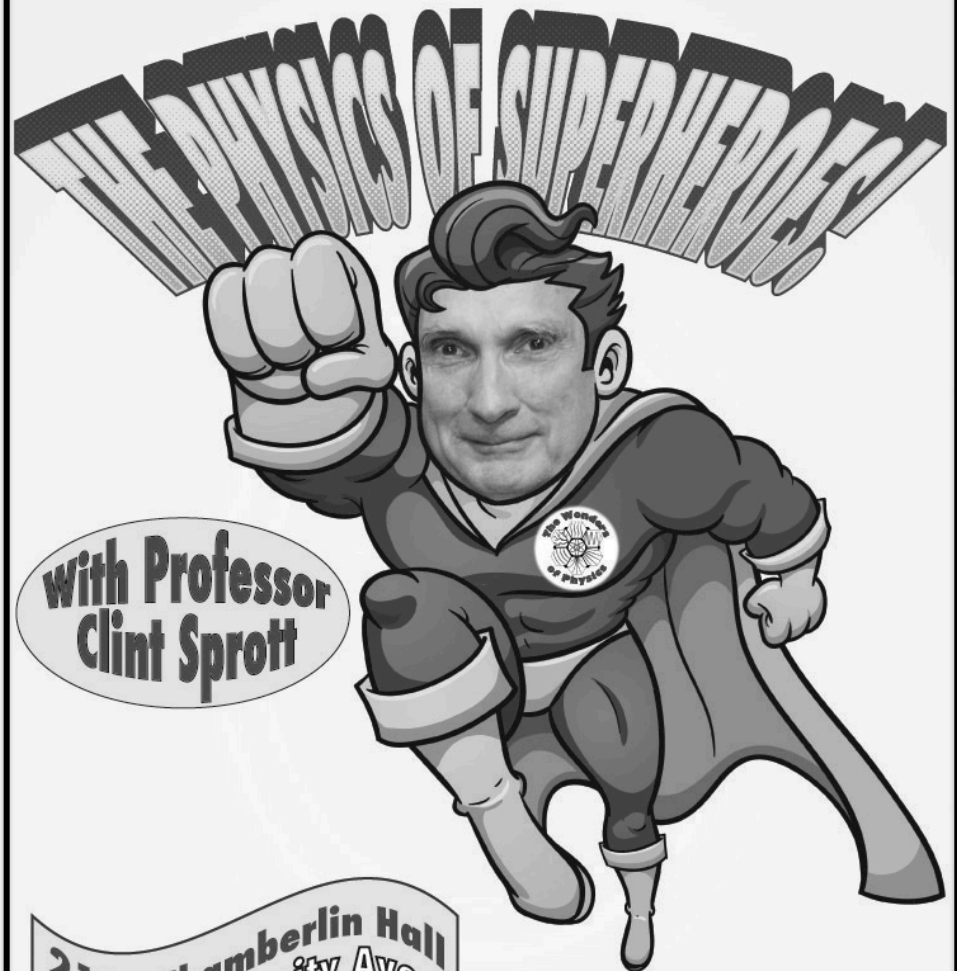
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The 33rd Annual Presentation of

# THE WONDERS OF PHYSICS



2103 Chamberlin Hall  
1150 University Ave.  
Madison, Wisconsin

and the UW-Madison  
Physics Department

## ***THE PHYSICS OF SUPERHEROES***

ZAP! POW!! COMIC BOOK SUPERHEROES ARE EXCITING. TOO BAD WE CAN'T HAVE SUPERPOWERS. WAIT! WE CAN! IF WE USE PHYSICS! JOIN SUPER PROFESSOR SPROTT AND THE UW-MADISON PHYSICS LEAGUE HEROES AS THEY USE SCIENCE TO BATTLE THE FORCES OF EVIL ANNOYANCE.

### ***PROGRAM***

PROLOGUE (PETER WEIX, CLINT SPROTT)

MOTION (MIKE RANDALL):

BLOCK AND TACKLE  
HYDRAULIC PRESS  
PING PONG BALL CANNON\*  
LIQUID NITROGEN CANNON\*

HEAT (MICHAEL WINOKUR):

LARGE CAN CRUSH\*  
PARABOLIC MIRRORS (LIGHT THE MATCH)  
METHANE BUBBLES  
VORTEX CANNON & EXPLODING SMOKE RINGS  
FIRE TORNADO  
EXPLODING BALLOON\*

SOUND (AKIRE TRESTRAIL):

DOG WHISTLE  
DOPPLER EFFECT (BALL)  
RUBENS' TUBE  
DRIVEN CHLADNI PLATE  
BREAKING A BEAKER WITH SOUND\*

ELECTRICITY (MORIAH TOBIN):

ELECTRIC WAND  
VAN DE GRAAFF GENERATOR  
MARX GENERATOR\*

MAGNETISM (PETER WEIX):

MAGNET WITH ALUMINUM & IRON NAILS  
FERROFLUID  
MAGNET INSIDE COIL CONNECTED TO GALVANOMETER  
JUMPING RING

MAGNETISM (CONTINUED):

LEVITATING BALL  
MAGNETIC LEVITATION WITH A SUPERCONDUCTOR

LIGHT (ANDREW SELTZMAN)

IR CAMERA  
RAINBOW, POLARIZATION  
LASER DIFFRACTION, SCATTERING  
UV FLUORESCENCE  
X-RAY MACHINE

EPILOGUE (CLINT SPROTT AND COMPANY):

LIQUID NITROGEN CLOUD

\*Please note that these demonstrations will produce a loud and/or sudden sound

Coordinator: Peter Weix

Visuals & Sound Effects: Steve Narf

Lighting: Bill Zimmerman

Theme Music: Jim Latimer &

Frank Ferriano

Educational materials and special presentations of "The Wonders of Physics" are available for schools and other groups. Please visit: <http://wonders.physics.wisc.edu> for more information.

Presentations from 1986 to the present are available on DVD and the Web. For more information, please call 608-262-2927 or visit <http://sprott.physics.wisc.edu/wop.htm>.

Please give us your comments about "The Wonders of Physics" at <http://sprott.physics.wisc.edu/wop/survey.htm>.

Our NSF grant funding has ended. Our DOE funding has been reduced. We need to replace 70% of our budget. Please click the QR code on next page, or visit <http://wonders.physics.wisc.edu/228.htm> to explore ways that you can make a difference!



***Thank you!***

