



## FIVE AND NINE PLUS

### THE OFFICIAL NEWSLETTER OF THE APPLEDORE AND DISTRICT AMATEUR RADIO CLUB

Club Callsigns: G2FKO and GX2FKO  
Web Site : [www.adarc.co.uk](http://www.adarc.co.uk)

#### CLUB'S OFFICERS

President	John Jeffers	G0UNB	
Chairman	Terry Adams	G4CHD	
Vice Chairman	Mike Hammond	G3PGA	
Secretary	Alan Fisher	M6CCH	01237 422833 Email: <a href="mailto:fisheralan@btinternet.com">fisheralan@btinternet.com</a>
Treasurer	Mike Wogden	G4KXQ	
Committee	Laurence Soutter	G4XHK	
	John Lovell	G3JKL	
	Graham Bailey	G1ZTJ	
QSL Manager	John Lovell	G3JKL	
Web Master	John Lovell	G3JKL	
Editor	Terry Adams	G4CHD	

June, 2014

#### EDITORIAL

I hope that this Newsletter doesn't contain too many senior moments as it was prepared in rather a rush after a Twinning Trip to France for the 70<sup>th</sup> Anniversary of the D Day Landings. However, I will try to keep them to a minimum!!

**I would like to take this opportunity on behalf of your Committee and all our members to thank Dave (G0PGK) for his very kind offer to take over the coffee/tea facilities on Club evenings. However, Dave cannot do it all on his own, SO PLEASE OFFER YOUR HELP. Apart from helping with serving, the mugs etc need washing at the end of the evening as they are kept at the Clubhouse. If we ALL take a turn, then it won't be a chore. Thanks.**

This month's talk 'SDR on the cheap' is by our new Treasurer, Mike (G4KXQ) and promises to be most interesting - particularly as it contains the word 'cheap' in the title !! (I'm a typical Yorkshireman!). No - joking apart, SDRs are here to stay and if it is possible to put your toe in the water without a huge expense, then this talk could whet your appetite.

We have now got confirmation for our Open Meeting talk in August by the Appledore RNLI. As and when I get more information, I will report in future 5&9s.

So, enjoy your Newsletter and hopefully see many of you next Monday evening

Terry (G4CHD)



#### CLUB MEETINGS

Unless otherwise stated, Meetings are held at the Appledore Football Social Club starting at 7.30pm for 8.00pm. Visitors are always welcome.

For further information, contact Alan (M6CCH)

June 16th	"SDR on the cheap" by Mike (G4KXQ)
July 21st	Club "Bring & Buy"
August 18th	Open Meeting - "Appledore RNLI"
September 15th	"History of Radio in North Devon" by Peter Christie
October 20th	Brief History of Policing Terrorism' by Alan (M6CCH)
November 17th	A Light Hearted Radio Quiz - by John (G3JKL)
December 15th	Club Christmas Party
January 19th	"Contests - Beauty or a Beast?" by Terry (G4CHD) & Mike (G3PGA)
February 16th	"Whisper & WebSDRs" by Mike (G4KXQ)
March 16th	Club AGM
April 20th	TBA

#### JAPANESE COMIC STYLE EDUCATIONAL MATERIAL

Many thanks to Dave (M0JAP) for bringing the following website to my attention :-

<http://www.stelab.nagoya-u.ac.jp/st-www1/doce/outreach.html>

Despite the comic format, the content is quite interesting. A few pages from one of the publications are included at the end of this Newsletter.

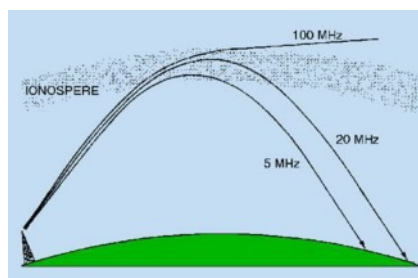
## REPORT ON THE MAY MEETING

### BACK TO BASICS HF RADIO PROPAGATION & UNDERSTANDING PREDICTION DATA

by Terry (G4CHD)

This was another in the Back to Basics series of talks and although covering the same ground as a previous talk a few years ago, the use of prediction indexes and freely available software on the internet was now included.

The role of the sun was introduced with its ionising effect upon the Earth's ionosphere and how the various ionised layers interact with an hf radio wave.

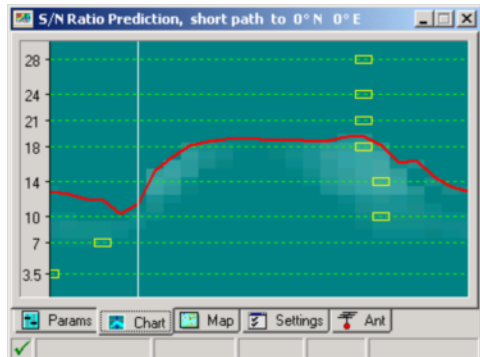


The measurement and use of various prediction indexes such as sunspot numbers, and the solar flux and K and A indexes was then explained.

However, their interpretation to

predict propagation conditions can be quite general. The use of a free software program - HamCAP, which acts as a front end to

VOACAP was introduced. The program required a value of smoothed sunspot number and Kp index to be fed in from which a monthly average MUF



plot was produced. Although this was very useful, it still only gave average propagation conditions. The final suggested solution, was to monitor the 18 HF Beacon transmissions aided by a useful free program - W6NEK Beacon Tracker.

The talk concluded with a question and answer session. As the talk was given by your truly, I can only hope that members found it interesting and useful.

Terry (G4CHD)

## SUDOKU PUZZLE

The aim is to enter a number into each cell so that **any column, or any row, or any block of cells contains all numbers from 1 to 9.**

5		8			3		7	
3				5	6			8
	7							
	9	6				7		
2				1	3		6	
8							2	1
							1	
	3			4	1		8	
	1				5	3		7

Terry (G4CHD)

## LOCAL SKEDS

**Zepp Net:** Mon, Tues, Thurs :  
145.450 MHz **Wed**  
via **GB3DN** 1600 local time

**6m Net:** Wednesday, 8pm, **51.480 MHz FM**

**HF Net:** Friday at 1500 local time  
**7.145 MHz ± qrm**

**Slow Morse:** Run by **Dave (G3YGJ)** every  
Tuesday and Thursday, 7pm clock time  
on **145.250 mode FM**.

**70cm Net:** Sunday, via **GB3ND**, 1100 - noon  
local time.  
Available on Echolink node 221334

## LOCAL REPEATERS

**70cm Handy Cross Repeater/Echolink (#221334)  
Gateway (GB3ND)**

**User:** Listen 433.35MHz– Transmit 434.95MHz  
Access 1750Hz Tone (Timeout 4.25 mins)/ 77Hz CTCSS  
Repeater keeper is Jeff (G4SOF)

**2m Stibb Cross Repeater (GB3DN)**

<http://www.g0rql.co.uk/gb3dn.htm>

**User:** Listen 145.6375MHz - Transmit 145.0375 MHz.  
Access 1750 Hz Tone or 77 Hz CTCSS Repeater keeper is  
Tony (G1BHM).

Yahoo users group for general chat and banter at :-  
<http://groups.yahoo.com/group/GB3DN/>

## CROSSWORD

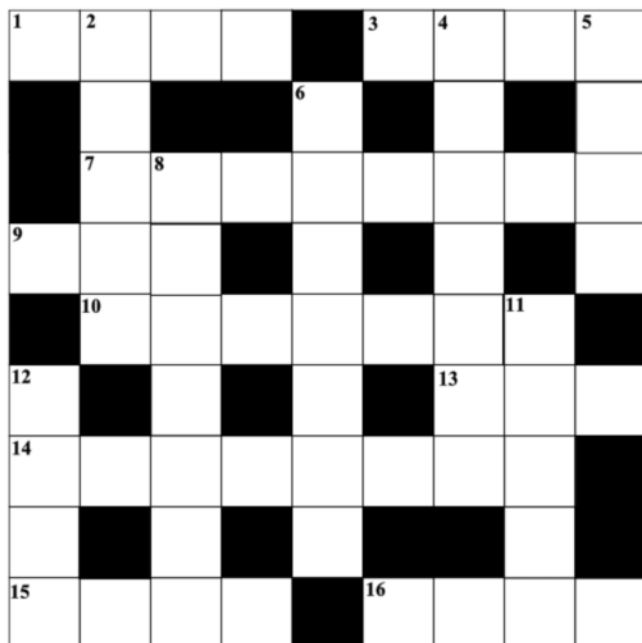
This month's Crossword is by Stuart (M1FWD).  
The answers will be published in the next month's Newsletter. Good luck !

### Clues Across

- 1) Three Delta Two islands (4)
- 3) River flowing through Oxford (4)
- 7) Golf Uniform island (8)
- 9) Meteorologically, a low pressure region between anticyclones (3)
- 10) Three Victor land (7)
- 13) Nothing (3)
- 14) Made less strong (8)
- 15) Require (4)
- 16) Adjust a radio to the particular frequency of the required signals (4)

### Clues Down

- 2) Usually oblong piece of cast metal, especially gold, silver or steel (5)
- 4) Famous chapel in Hotel Victor location (7)
- 5) Leguminous plant, *Glycine max* (4)
- 6) A vehicle towed by another (7)
- 8) Make a hooting cry (7)
- 11) The first bishop of Lindisfarne (5)
- 12) ? - lead: two-conductor flat cable (4)



### Last month's answers :-

**Across** 3) blots 6) rotor 7) Osaka 8) solders 12) Kenya  
14) space 15) audit

**Down** 1) trek 2) stylo 3) broadcast 4) ova 5) star  
9) relay 10) okta 11) week 13) nod

Stuart (M1FWD)

Many thanks to Stuart (M1FWD) who has also sent the following Word Search for members to have a go at over their morning cuppa :-

## Weather Word Search

H F Q O G C F E T L H E E A Y Z C E  
E S O O W R P H H Y C R S U N N Y N  
A S F R E L I A H K U Q F A S G A I  
T U C E E T O H K T V Y E P D S S F  
Z C Z C N C M V A T O R N A D O E F  
C E D I A E A R R M G Q J N C M A D  
M L A N O R E S P R E S S U R E S U  
R R O L I P S F T P L A F O P L O O  
O O A U M W U A E P K M Y A H W N L  
T G C E D G N L F H Q C O L D S Q C  
S R T X C Y W N C N Q F H J A N R O  
A E H K K K K U G E S L X M D O J B  
Q Y L K Z C T M D T N Y K E Y W C I

CLOUD  
FINE  
FREEZE  
HOT  
SEASON  
SUN  
TORNADO

CLOUDY  
FOG  
HAIL  
PRESSURE  
SNOW  
SUNNY  
WIND

COLD  
FORECAST  
HEAT  
RAIN  
STORM  
TEMPERATURE

If any member has written an article that they feel would be of interest to Club members, please send it in to me and it will make your Club Newsletter all the more interesting.

Enjoy the read

Terry (G4CHD)



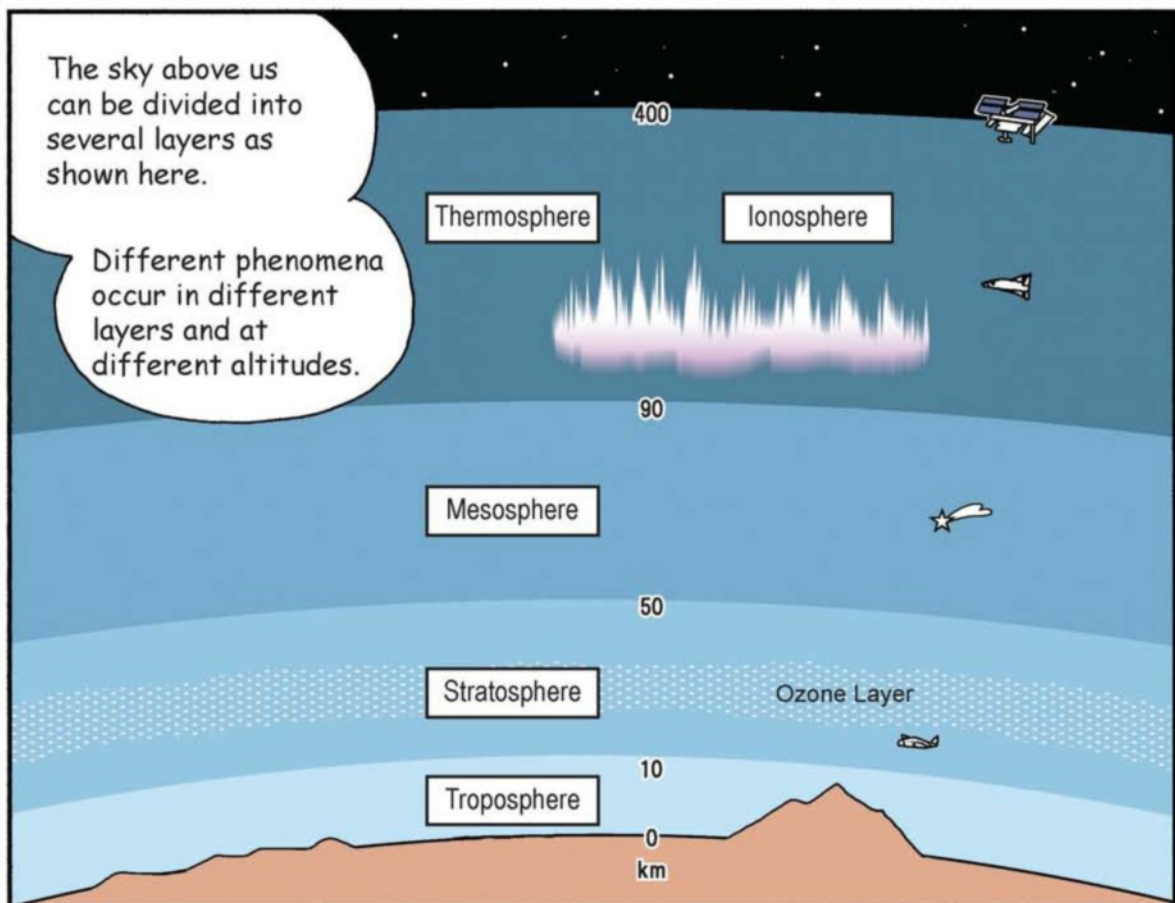
# What is the Upper Atmosphere?!

By Hayanon

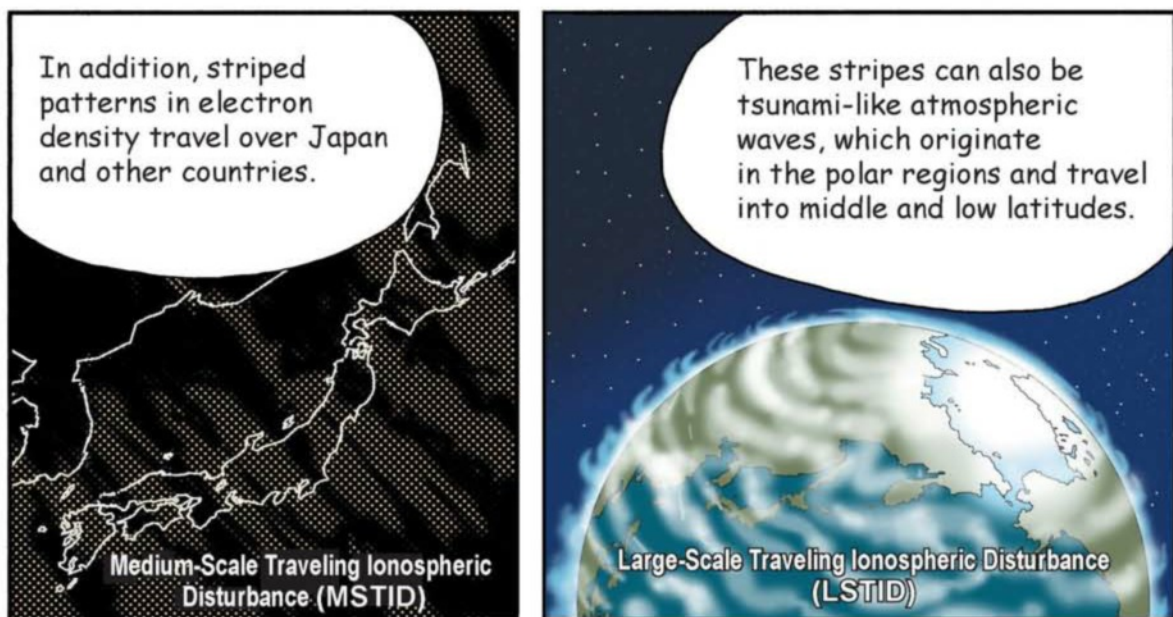
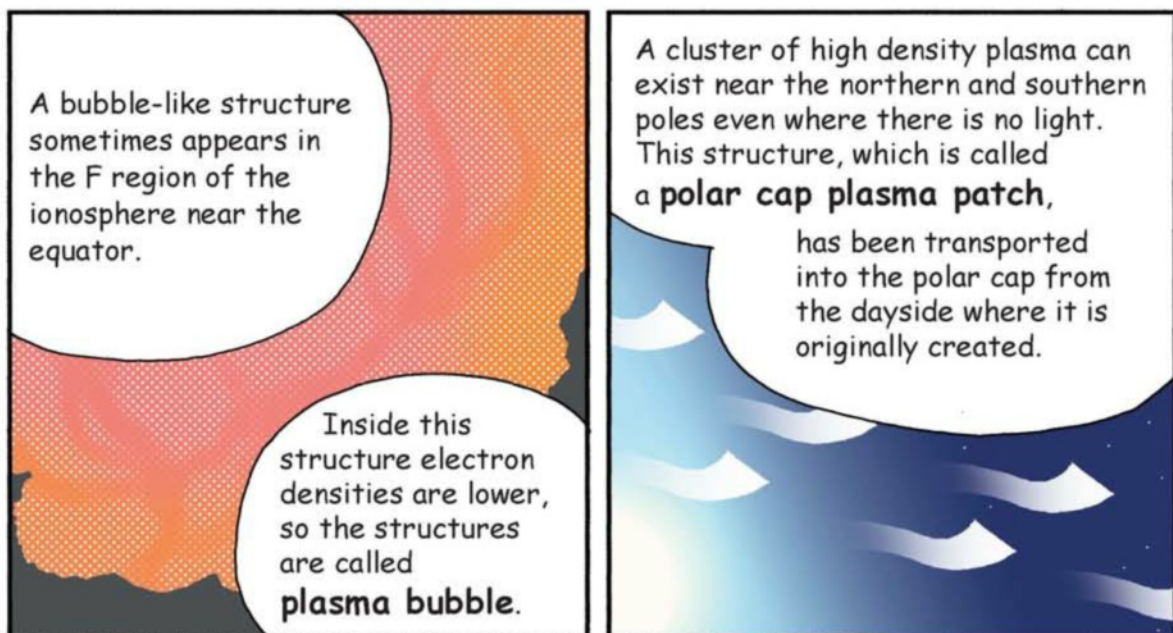
Translated by Y. Noda and Y. Kamide

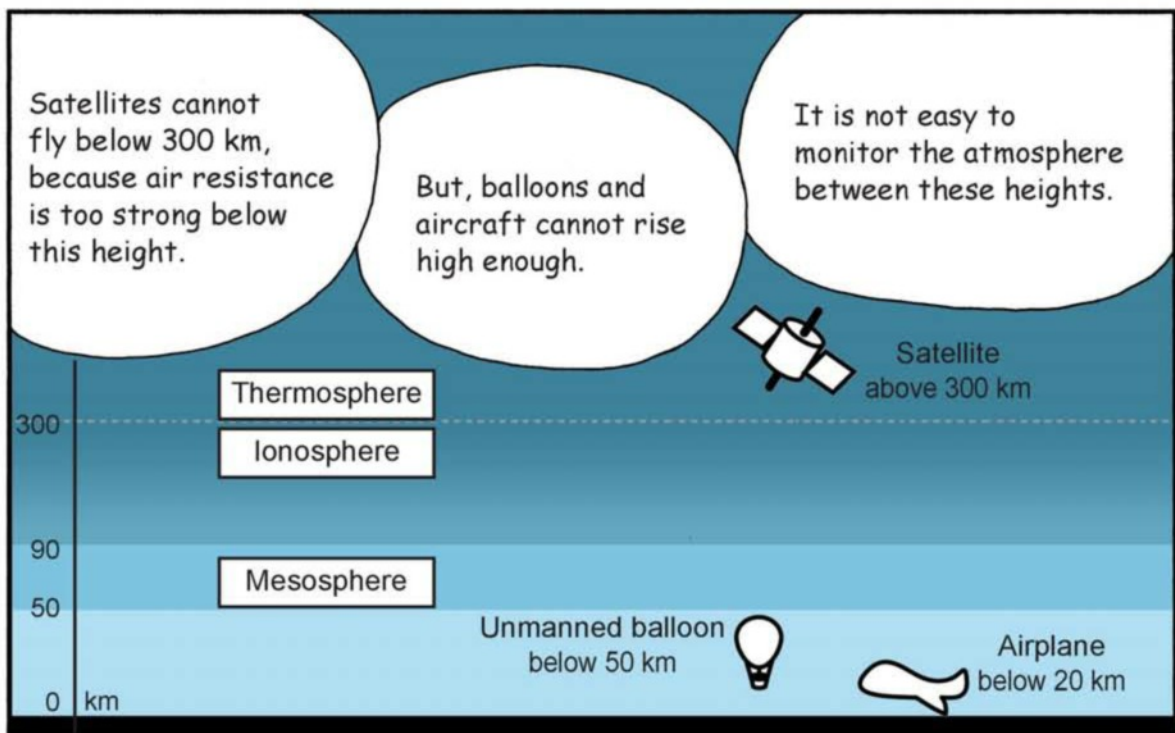
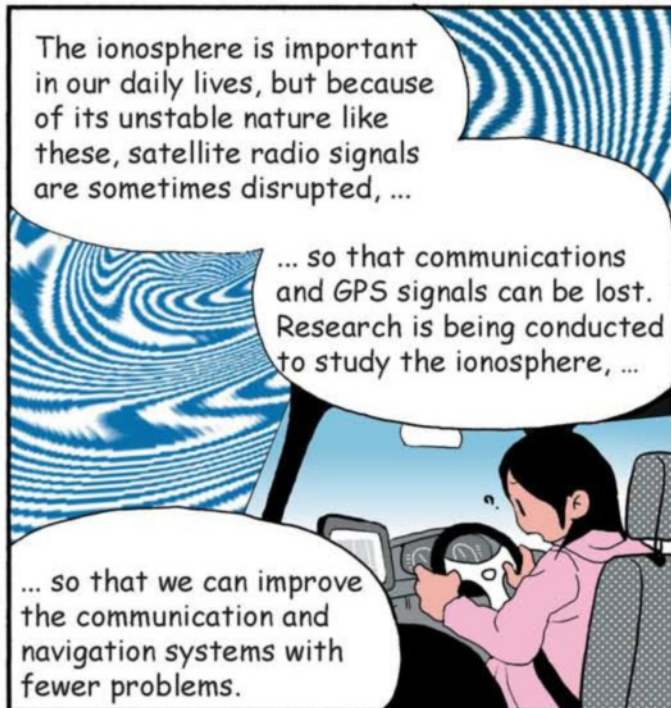
Supervised by K. Shiokawa













# Why

## does the air become thinner at higher altitudes?

As you know the air becomes thinner as you move higher. That is why we find it hard to breathe on a high mountain. For instance, at the summit of Mt. Fuji (3776 m), the air is only two-thirds of that at sea level. Don't you wonder why that is so?

The reason is related to the Earth's gravity. I will explain that now. Air, although light in weight, is pulled down by gravity. Does all the air fall down to the ground then? There is no need to worry. It never happens because air molecules are moving fast in random directions and are colliding with each other. The force exerted by these molecules on a unit area is called air pressure.



Air pressure is  $1 \text{ kg/cm}^2$  at ground level. In other words, accumulated air on your thumb weights about 1 kg. Despite that we are not flattened on to the ground because equal pressure is pushing outward from inside out body.

Our world lies at the bottom of the "heaped" air. The air at the ground is pressed and thick, whereas it is less pressed and lighter at high altitudes. Thus air becomes thinner as we go up higher.

You will find that the thin air at high altitudes has unique characteristics different from those of the air surrounding us on the ground. The air there is electrically charged, experiences changes in its composition, and even emits light! The upper atmosphere is a place filled with those mysteries, and at the same time, it is the boundary between space and the Earth's atmosphere.

Mol and Mirubo are going to explore the upper atmosphere this time. Let's take off and join them!



Unnngh,  
why is it so heavy?