

# Meteor Scatter DXing On The TV And FM Bands

*Patience And Persistence Can Pay Off With Outstanding DX!*

By Frank Aden, Jr., N7S0K

It is probably true that all non-TV-FM DXers have seen examples of meteor skip or scatter on the TV channels and/or the FM band and not realized what it was. If you've ever stopped on an empty TV channel or FM frequency and have seen or heard a short burst of signal lasting only a second or two, you have experienced meteor scatter or skip. Of all the major types of propagation that affects the VHF and UHF frequencies, meteor skip is the only one that can be predicted in advance for specific dates.

Meteor skip is one of the most challenging areas of TV and FM DXing. It is believed to be caused by the ionization of the ionosphere by the trails of incoming meteors (shooting stars) before they burn up. Since this only takes a second or so, the ionization is short-lived. Meteor Scatter usually affects only TV channels 2-6 (low band VHF) and the FM broadcast band. It has been known to affect higher frequencies including those in the UHF range, but only on rare occasions. Distances are usually in the 300-900 mile range.

## Time Is Tight!

The challenging part of Meteor Scatter DXing is that you have so little time to identify the station received in the "burst." All is not a lost cause, as there are several techniques that can be used to build up a DX log.

Although this type of DX can be seen or heard at anytime year round, it is very predictable because we know when the major meteor showers occur (see Table No. 1) and Meteor Scatter (MS) DX peaks during those times. Showers are rated by the number of meteors per-minute produced and some showers are better for MS DXing than others. I have found those in August, November, December, and January to be the best. TV and FM DXers

look forward to each major shower with great expectations as each one acts as a separate DX "season."

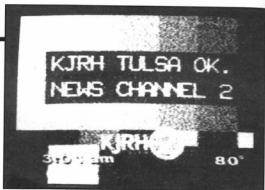
To DX Meteor Scatter, an outside antenna on a rotator is almost a must. Since many of the "bursts" are of weaker signal quality than Es and

other VHF propagation, you must have a decent high-gain system working for you to be successful. A sensitive TV and/or FM receiver coupled to a high-gain yagi or log periodic antenna will make an acceptable DXing combo. The antenna should be as high as possible and a VHF preamp can add additional sensitivity. Those living in highly congested VHF areas may find preamps to be more of a problem due to overload caused by local stations. Antennators can be of help in those situations. Preamps should be kept in mind since they can be used when many of the locals are off the air.

Some DXers use their automobile FM radios by going to areas away from local broadcast transmitters, allowing them a "quiet" monitoring post since FM tuners in automobiles are very sensitive. Many DXers even have portable TVs and antennas systems and go to remote sites during the major showers.

## Techniques

The techniques of Meteor Scatter DXing require great patience and persistence. Fortunately for TV DXers, meteors are at their peak in the early morning hours, when local stations may be off the air and distant stations may be running test



*Photo of KJRH, Tulsa, Oklahoma received via Meteor Burst at a distance of 1,177 miles.*

patterns and/or color bars. Having different time zones in North America is a help in this area. If you live in the west, eastern stations will be on before your locals. If you live in the east, very early morning hours may have western stations still on the air, finishing their broadcasting schedule. You have to be willing to get up early (4 a.m. to 6 a.m.) and sit in front of your TV set, tuned to the lowest open VHF channel and wait for the Meteor Scatter bursts. Since we know when the major showers occur, it is more profitable to do this during these periods. If you have access to the Internet, check out <http://fs1.ilk.de/sites/gap/metswh.htm> for a detailed meteor shower calendar.

For TV Meteor Scatter DXing, DXers usually have a camera set to photograph the station's Test Pattern or Color Bars and/or a VCR running. In fact with the proliferation of VCRs, TV DXing has been made easier. Just set your VCR on the lowest available open channel and set it to record from 4 a.m. to 6 a.m. local time. You can be asleep during the peak Meteor Scatter period, then later review the tape to see if any DX occurred. TV DXers have been known to edit their DX tapes and have accumulated large albums of Meteor Scatter TV DX photograph albums.

During major meteor showers it's often very possible to identify stations during

Table 1—Major Meteor Showers

Shower	Peak	Meteors per hour	Shower	Peak	Meteors per hour
Quadrantids	Jan. 4	60	Aquarids	July 28	27
Virginids	Jan. 15	20	Capricornids	July 30	10-35
Aquarids	May 3-4	21	Perseids	Aug. 12	25-100
Scorpiids	June 5	20	Aurigids	Sept. 1	0-35
Arietids	June 7	30	Orionids	Oct. 20	30
Ophiuchids	June 20	8-20	Leonids	Nov. 17	20
Taurids	June 26	30	Geminids	Dec. 14	60
Draconids	June 30	10-100	Ursids	Dec. 22	17-20
Draconids	July 10	100+			

regular broadcast hours. I usually leave my TV set on either Channel 3 or 4 (I have a local channel on Ch. 2). Even though the least favorable time for Meteor Scatter is around 6 p.m., I have had considerable success with identifying stations in that time period. I rotate my antenna to the direction with the most station possibilities, but I also do a "burst check" first, checking various directions to see from where the maximum number of bursts are coming.

As an example, on one occasion, having left my TV set on Ch. 4 during one early evening, I noticed multiple bursts were being received from what appeared to be the same station. Programming was local news, and I knew if the bursts continued to be received from the same station I would eventually be able to see a burst during the local weather report. That would reduce the station to just a few possibilities. After waiting several minutes I finally saw several bursts and a state map! Knowing from my WFTDA (Worldwide TV-FM DX Association) TV Station Guide there were only two stations in that state on Channel 4, I was able to send a tentative report to each station fully describing the news and weather "sets" and the time I saw them. A few weeks later, I received a verification letter from one of the stations informing me I had definitely seen their station. The other station also replied indicating they did not run news at that time and I had seen the other Channel 4 in their state. A little patience had paid off!

Today we have excellent sources on the Internet for locating and identifying stations. You can try the FCC FM database at <http://www.fcc.gov/mmb/asd/fmq.html>. You will also find links to their TV database from there. USA TV ONLINE is another excellent web page for TV station information and it can be found at <http://www.metronet.com/~chipk/usatv.html>.

Belonging to an organization like WFTDA can increase your station totals tremendously. WFTDA has a column for

identifying stations from receptions such as above which is very useful for Meteor Scatter DX. The TV DXing hobby has developed a system for classifying different types of color bars and test patterns used by TV stations and WFTDA's CCI (unidentified stations) column tries to keep abreast of which stations are using which types of color bars and test patterns. WFTDA also publishes TV station logos in its VHF-UHF DIGEST frequently to help identify those seen by Meteor Scatter and other forms of TV DX. WFTDA's regular DX reporting columns can also be of aid in identifying stations. For a sample copy of WFTDA's UHF-UHF DIGEST, send \$1 to P.O. Box 501, Somersville, CT 06072. Their web page is <http://www.ANARC.org/wtfda/>. Their MAILBOX column has a Website at <http://pages.cthome.net/fmdx/mailroom.html>.

### FM Meteor DX

FM Meteor Scatter DXing, I believe, is even harder to do than Meteor Scatter TV DXing. To have any chance of identifying FM MS DX you must be extremely patient. The best bet is to sit on one open frequency and note the number of bursts coming in. As in Meteor Scatter TV DXing, it is a good idea to check antenna directions for maximum number of bursts. Leave your tape recorder running to capture any reception heard. If you are hearing music most of the time, move to another frequency. The trick is to find a frequency with a station running a lot of announcements, Top 40 rock, News etc. For frequencies where you hear a lot of music, try them only during station identification time, five minutes before the hour to five minutes after the hour. Collecting partial data on a station heard by Meteor Scatter might also make it possible to be identified by sending the information to the WFTDA CCI Column (if you are a member). Bruce Elving's FM

Atlas is an excellent directory to FM station in North America and lists many of the station slogans that might be heard in a Meteor Scatter burst. The FM Atlas is available at many radio dealers. You can get more info at <http://members.aol.com/fmatlas/>.

DXing the TV and FM bands via Meteor Skip may seem to be almost impossible, but with a little patience and persistence you may be surprised at the results you can achieve. I have actually had bursts occur during identification time, contrary to the DXing hobby's Murphy's law, that stations never identify when you are getting the best signal. ■

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